

# COMPANY PROFILE

PT. ANDALAN NUSANTARA ADYATAMA

2024

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# About Us.

PT. Andalan Nusantara Adyatama (ANA) adalah sebuah perusahaan yang bergerak di bidang penjualan :

**Spare Parts Heavy Equipment.**

**After Market Parts Commodity.**

**Tools.**

**Consumable Parts.**

**Fabrication.**



Sector bisnis yang saat ini digeluti untuk menjalankan bisnis dari ANA yaitu :



**Mining**



**Oil & Gas**



**Construction**



**Transportation**

ANA selalu berusaha memberikan pelayanan terbaik dengan meningkatkan jangkauan dan kemampuan untuk memenuhi permintaan pelanggan melalui ketersediaan suku cadang, harga yang kompetitif, dan suku cadang yang berkualitas.

ANA juga memiliki komitmen untuk terus melakukan perbaikan demi memberikan solusi terbaik bagi para pelanggan.

## Our Vission.

“ Menjadi perusahaan yang terpercaya dan partner bagi pelanggan dan stakeholder untuk maju dan berkembang bersama. ”



## Our Missions.

Selalu mengedepankan quality dalam memastikan produk dan jasa yang diberikan kepada pelanggan.

Menjadi kebanggan bangsa & negara.

01. Selalu berkomitmen memberikan yang terbaik kepada pelanggan.
02. Selalu mengedepankan quality dalam memastikan produk dan jasa yang diberikan kepada pelanggan.
03. Menciptakan sustainable shareholder value.
04. Menjadi kebanggan bangsa & negara.



# Why Us?

Berbagai keuntungan untuk mendukung efisiensi operasional Anda.



## Spare Parts

Kami mendistribusikan sparepart Alat Berat dan Alat Support untuk industri Mining dan Non Mining Anda.



## Fair Price

Kami memberikan harga yang kompetitif untuk kebutuhan Alat Berat dan Alat Support untuk industri Mining dan Non Mining Anda.



## Principal

Kami disupport oleh principal dengan produk-produk yang berkualitas.



## 24/7 Service

Kami menyediakan layanan service 24/7 secara offline dan juga online.



## Equipments

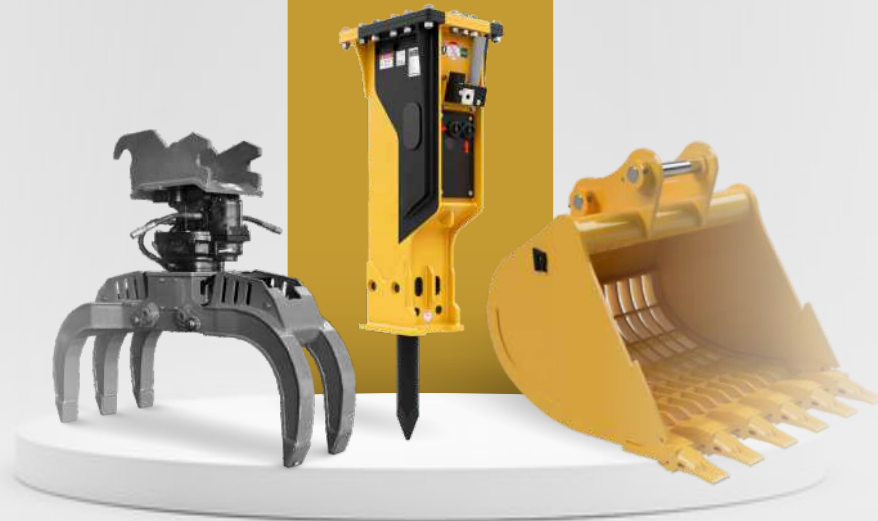
Kami memiliki equipment untuk mensupport kegiatan Mining dan Non Mining Anda.

# Product Line Solution.



# Attachment Solution.

Berbagai tipe attachment untuk efisiensi dan produktivitas alat berat.



# 01. Excavator/Wheel Loader Attachments.

# Attachment Solution.

Kami menyediakan berbagai macam attachment untuk Excavator dan Wheel Loader dengan kualitas bagus dan bergaransi dengan harga yang kompetitif.

**Bucket**



**Grapple**



**Others**



## 02. Special Attachments.

# Attachment Solution.

**Pile Cutter**



**Tree or Bush Mulcher**



**Stone Grapple**



**Soil Mixer**



**Demolition Concrete Cutter Wheel**



**Shear Crusher Concrete & Steel**



## 02. Special Attachments.

# Attachment Solution.

**Vibro Compactor**



**Excavator Fix Ripper**



**Excavator Crushing Bucket**



**Rotating Shear Cutter Steel**



**Scrap Grapple**



**Hydraulic Breaker T&H**



## 02. Special Attachments.

# Attachment Solution.

**Hydraulic Breaker TRD**



**Hydraulic Magnet**



**Bigfoot Trencher**



**Auger for Foundation Work**



# Attachment Solution.

## Hydraulic Breaker.



specifications

Descriptions		T&H 10	T&H 30	T&H 50	T&H 60	T&H 70	T&H 120	T&H 140	T&H 160	T&H 220	T&H 230	T&H 250	T&H 320	T&H 420	T&H 470	T&H 520	T&H 720
Operating weight(kg) <sup>*1</sup>	with mounting bracket	158	178	306	430	595	950	970	1,300	1,750	1,900	1,880	2,460	3,050	3,600	4,550	6,910
	without mounting bracket	135	152	284	405	562	905	925	1,160	1,520	1,680	1,650	2,240	2,580	3,120	3,800	6,090
Overall height(mm)	with mounting bracket	1,265	1,403	1,583	1,760	2,027	2,279	2,220	2,520	2,754	2,826	2,829	2,951	3,213	3,276	3,682	4,158
	without mounting bracket	1,115	1,244	1,381	1,519	1,760	1,992	1,935	2,180	2,374	2,456	2,449	2,531	2,781	2,844	3,139	3,598
Operating pressure(bar)		80-110	90-120	95-130	100-130	130-150	150-170	140-180	160-180	160-180	160-180	160-180	160-180	160-180	160-180	160-180	160-180
Required oil flow(liter/min)		20-30	25-40	30-45	40-80	60-100	80-110	80-130	90-130	135-180	120-180	150-190	160-220	190-250	220-280	250-310	350-450
Impact rate(BPM)		600-1,200	500-1,000	450-750	450-950	400-800	450-800	400-1,000	300-900	300-650	200-700	300-600	200-500	200-450	200-600	150-350	120-320
Tool diameter(mm)		Ø45	Ø53	Ø68	Ø75	Ø85	Ø100	Ø110	Ø120	Ø135	Ø140	Ø145	Ø150	Ø160	Ø170	Ø180	Ø200
Hose Diameter(inch)		1/2	1/2	1/2	3/4	3/4	3/4	3/4	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Carrier weight(tons)		0.5-2.0	1.0-4.5	2.5-7.0	3.5-9.0	6.0-10.0	7.0-12.0	10.0-16.0	15.0-22.0	17.0-29.0	19.0-32.0	25.0-32.0	27.0-42.0	32.0-52.0	36.0-60.0	45.0-80.0	85.0-100.0
Feature overview	Auto greasing kit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Underwater kit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Soundproof(SP) kit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Dustproof(DP) kit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Auto stop(Anti blank firing)	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■
	Auto start	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■
	Adjustment frequency(BPM)	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■
	Adjustment impact power	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■

Note)

- \*1) Operating weight includes standard mounting bracket(adaptor) with working tool.  
 - Above data are indicative and subject to change without notice.

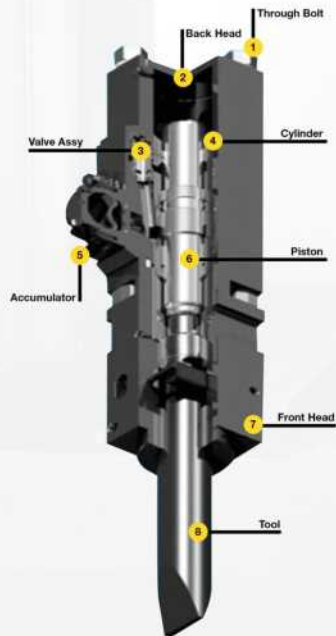
- Above data are indicative and subject to change without notice.

# 03. Hydraulic Breaker.



# Attachment Solution.

## Breaker Structure



- 1. Through Bolt.**  
The Longest service life due to adoption of advanced heat treatment process.
- 2. Back Head.**  
The energy of piston stroke is accumulated due to charged nitrogen gas.
- 3. Valve Assy.**  
Easy to access for repairing and or replacing.
- 4. Cylinder.**  
Super stability quality through manufacturing by precision CNC machines.
- 5. Accumulator.**  
Enhancing equipment durability through this efficient shock absorption system.
- 6. Piston.**  
Noted durability as a result of quality proven material in intensity, anti-wear, heat resistance, tenacity, anti-impact, internal pressure, etc.
- 7. Front Head.**  
Supports Breaker and assembled with bush, which buffers shock from the tool.
- 8. Tool**  
This working tool ensures the TRD Hydraulic Breaker's perfect performance and economy.

## Specification

	Operation Weight (Kg)	Carrier Weight	Size of Tube	Required Oil Flow	Operating Pressure	Impact Rate	Chisel Diameter
TRD 500	120Kg (Top & Side)	2.0 - 4.5 Ton	0.5 inch	40 - 70 LPM	90 - 120 BAR	600 - 1100 BPM	53 mm
TRD 700	Top Type: 295 Kg Side Type: 180 Kg	4.0 - 7.0 Ton	0.5 Inch	40 - 70 LPM	110 - 140 BAR	500 - 900 BPM	68mm
TRD 800	Top Type: 520 Kg Side Type: 460 Kg	6.0 9.0 Ton	0.5 Inch	45 - 85 LPM	120 - 150 BAR	400 - 800 BPM	75 mm
TRD 1300	Top Type: 930 Kg Side Type: 887 Kg	11.0 - 16.0 Ton	0.75 Inch	80 - 110 LPM	150 - 170 BAR	350 - 700 BPM	100 mm
TRD 1800	Top Type: 1980 Kg Side Type: 1750 Kg	18.0 - 25.0 Ton	1 Inch	125 - 150 LPM	160 - 180 BAR	400 - 800 BPM	140 mm
TRD 2500	Top Type: 2900 Kg Side Type: 2730 Kg	28.0 - 35.0 Ton	1.25 Inch	180 -240 LPM	160 - 180 BAR	250 - 350 BPM	155 mm



## Working Tool Guide

Flat		SOFT OR HARD BUT LOW OR MEDIUM ABRASIVE ROCK ■ Concrete ■ Breaking Boulders
Moil Point		SOFT, NON-ABRASIVE ROCK HIGH PENETRATION RATE ■ Concrete ■ Tunnelling ■ Trenching
Wedge Point		NON-ABRASIVE BUT DUCTILE ROCK LOW OR MEDIUM PENETRATION RATE ■ Concrete ■ Tunnelling ■ Benching ■ Trenching
Ball Point		SOFT, NON-ABRASIVE ROCK ■ Concrete ■ Tunnelling ■ Trenching

# 04. Crusher.



## MB CRUSHER: ADVANCED, VERSATILE, TOUGH.

For over 20 years MB CRUSHER has been designing and manufacturing attachments for heavy equipment regardless of size. Performance and resilience led the company to invent the first jaw crusher for excavators. Investing in technology research contributed to the development of MB's products that can be installed on any carrier machine, turning them into real mobile crushers while improving the machine's performance and allowing companies to use the resources available in their jobsites. MB CRUSHER has evolved over the years and has become the benchmark for the construction equipment industry around the world today. With a full range of products to give companies the solutions that they are looking for.

## 100% MADE IN ITALY

MB Crusher is an Italian company with a worldwide presence. All of the equipment's production phases take place at the headquarters in Park Vercellio, Italy. More than 45,000 square meters hold research and development laboratories, production departments, sales, marketing and administrative offices. Here, every piece of equipment is designed, assembled and distributed to international markets by more than 200 people. Brazil, China, France, Germany, Japan, India, Russia and United States. There are 9 subsidiaries abroad that support the headquarters to promote and distribute the products to all continents. And a network of over 230 dealers helps sell MB Crusher's products to over 130 countries.

Learn more

## MB CRUSHER HAS SOLUTIONS FOR EVERY CARRIER MACHINE

Crushers, screening buckets, shafts screens, drum screens, sorting screens. MB CRUSHER provides entrepreneurs with the widest range of attachments capable of making construction sites of any size, independent and competitive regardless of the job's nature and stage of action. All of MB CRUSHER's equipment was designed to solve all kinds of obstacles, even the most extreme. From skid steers, backhoes, telehandlers, mini and midi excavators, from 1.5 ton machines to excavators weighing 70 ton, there will be a suitable MB CRUSHER unit. Installation is straightforward and quick, whether it's for the larger machines in the MB range or the small ones.

## PRODUCTS GUARANTEED AND CERTIFIED QUALITY

Guaranteeing a safe product, that is compliant with international regulations is essential for everyone at MB CRUSHER. All aspects (from assembly to the finished product) are constantly certified to meet the market's needs and to guarantee the customer receives a product that is accredited for its good quality.

### PRODUCT CERTIFICATIONS

**ANALYZE** JRM/ANW  
Machinery directive PED directive

**CE CONFORM**  
Safety in machinery design

**QUALITY CERTIFICATION**

**ISO 9001:2015**  
Quality Management System

**PROCESS CERTIFICATIONS**

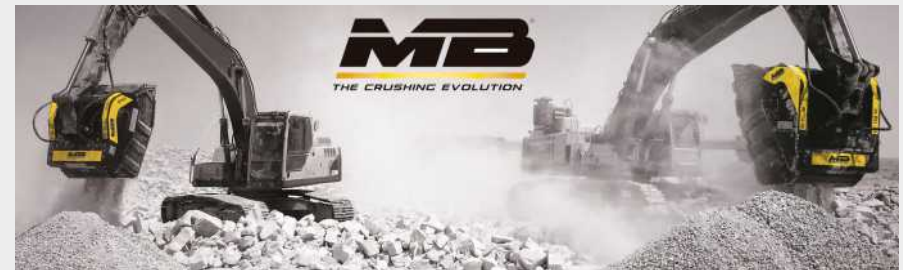
**ISO 9001:2015**  
**ISO 14001:2015**  
**ISO 45001:2018**  
**ISO 9001:2015**  
**ISO 14001:2015**  
**ISO 45001:2018**

Organization with qualified auditing processes and personnel

### PRODUCTS GUARANTEED AND CERTIFIED QUALITY

Guaranteeing a safe product, that is compliant with international regulations is essential for everyone at MB CRUSHER. All aspects (from assembly to the finished product) are constantly certified to meet the market's needs and to guarantee the customer receives a product that is accredited for its good quality.

# Attachment Solution.



## MB CRUSHER FOR EXCAVATORS

THE WORLD'S WIDEST RANGE OF CRUSHER ATTACHMENTS WITH MORE THAN 90% MARKET SHARE

- + EFFICIENT HYDRAULICS
- + PRODUCTIVE
- + STABLE
- + HARDW

WATCH THE VIDEO

## BEFORE AND AFTER: MB EQUIPMENT'S IMPACT ON INERT MATERIAL

The MB Crusher machines transform inert material directly on site and allow you to manage the recovery and recycling of the material, independently.

### BUILDING MATERIALS

Asphalt - Concrete - Brick  
Reinforced concrete - Travertine  
Ceramic - Drywall  
Demolition material

### STONE

River rock - Chalk - Marble  
Gravel - Lava stone  
Cobble stones - Rock  
Siliceous stone - Travertine - Basalt

### ORGANIC MATERIALS

Organic waste - Clay - Charcoal  
Wood - Landfill

### METALS

Aluminium - Iron - Copper  
Foundry material

### OTHER

Limestone - Plastics - Glass - Salt  
View posts - Lamp posts - Sand

WWW.MBCRUSHER.COM



# 05. Auger.

# DIGGA

## Augers

### TRUE CUT AUGERS

**DIGGA AUGERS CUT A TRUE SIZED HOLE, NOT AN OVERSIZED HOLE**

Digga True Cut design ensures a 12" auger, drills a 12" hole. Built tough with heavy duty pipe, shallow pitch flights and high efficiency cutting heads to maximize your drilling performance. Fitted with a range of quality wear parts providing superior wear and performance.

### DIGGA CUTTING SYSTEMS

The cutting head is the most crucial part of the auger and this is where Digga technology exceeds the rest of the market. Digga cutting heads are optimised for the most efficient cutting angles and rotational cutting efficiency. Choosing the right cutting head with correct teeth and pilot combinations is essential to ensuring maximum customer satisfaction.

#### EARTH AUGERS

**BOLT ON BLADED TEETH EARTH/CLAY/SHALES (AB4)**



**BLADED TEETH EARTH/CLAY/SHALES (A4, A6, A8)**



**ALL PURPOSE EARTH AUGER FOR GENERAL DRILLING**

Efficient and cost effective auger for general purpose drilling in earth, clay, shale and soft rocks. Available in either multi-flute design (MFL) providing longer wear life and greater cutting performance.

#### ROCK/COMBINATION AUGER

**TAPER TEETH (ALL GROUND CONDITIONS) (RC6, RC8, RC10, RC11)**



**TAPER TEETH DESIGN THE ULTIMATE ALL PERFORMANCE AUGER**

The angle and geometry of the teeth to the pilot is the key to the efficiency of which these augers perform. Consistently use augers in one. This auger is fitted with Super Taper Teeth for the ultimate range drilling in fractureable rock, general and general earth conditions.

#### ROCK AUGER

**ROTATING ROCK PICK TEETH (SHALE/FRACTURABLE ROCK) (DR6, DR11)**



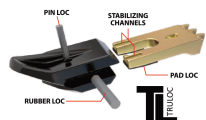
**HEAVY DUTY AUGER FOR DEDICATED ROCK DRILLING**

DIGGA Rock Auger: heavy duty engineered design, with high efficiency cutting heads to maximize your rock drilling performance. Fitted with a range of quality wear parts providing superior wear and performance.

## Augers Wear Parts

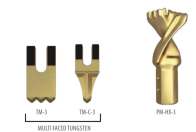
### TRULOC BLADED TEETH TO SUIT A4 AUGERS

Digga's new TRULOC tooth range allows the tooth to be secured in 3 different ways: Pin Loc, Case Loc, or one them all. The range also features an easy to remove pins, stabilising channels and the Digga quality that you've come to expect. The TRULOC teeth are suitable for light to moderate ground conditions.



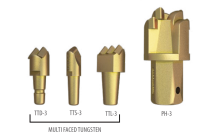
### PADLOCK BLADED TEETH TO SUIT A6 & A8 AUGERS

Padlock tooth retaining system utilises heavy duty rubber pads utilised onto the neck/leg of the teeth. Ensuring your teeth are locked in tight, but allowing for easy replacement in the field.



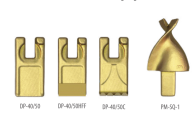
### TAPER LOCK TO SUIT ROCK/COMBINATION (RC) AUGERS

No need to have two augers for different conditions. Ideal in all drilling conditions up to hard rock. Cut a clean clean hole in soft earth and clay and have the ultimate ripping ability in fractureable rock.



### BOLT ON TEETH TO SUIT A8 AUGERS

40/50 tooth configuration allows you to choose between a 40° or a 50° cutting angle.



### ROTATING ROCK PICK TO SUIT ROCK AUGERS

Ideally suited for fractureable rock, concrete and abrasive conditions, dimpled retainer provides increased holding power in grooved blocks.



# Attachment Solution.

## Specification

### AUGER SPECIFICATION

#### MACHINES 750KG TO 4.5T

MODELS: TRACTOR DRILLERS, MINI EXCAVATOR, TRUCK CRANES

MODEL	COMBO ROCK/EARTH			ROCK AUGER			COMBO ROCK/EARTH	
	A4	AB4	RC4	A6	RC6	DR6	A8	RC8
DRILLING CONDITIONS	GENERAL	GENERAL	COMBO ROCK/EARTH	GENERAL	COMBO ROCK/EARTH	ROCK AUGER	GENERAL	COMBO ROCK/EARTH
HEB	2" Hex	2" Hex	2" Hex	2.5" Hex	2.5" Hex	2.5" Hex	3.5" Hex	2.5" Hex
OPTIONAL HUB	2 7/8" Round	2 7/8" Round	2 7/8" Round	2 7/8" Hex	2 7/8" Hex	2 7/8" Hex	3" Hex	2 7/8" Hex
DIAL	40"	40"	40"	60"	60"	60"	60"	60"
PIPE	2.375" - 4.5"	2.375" - 4.5"	2.375" - 4.5"	3" - 5.5"	3" - 5.5"	5.1" hollow bar	3" - 6.5"	3" - 6.5"
FLIGHTS (Pitch)	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	3/8"	3/8"
FLIGHTS (Camp)	5/16"	5/16"	5/16"	5/16"	5/16"	5/8"	3/8"	3/8"
TEETH	TS	DP-40/50, DP-40/50HFF, DP-40/50C	TTD/TTS	TM	TTD/TTS	3/4" Rock Pick	TM	TTD/TTS
Pilot	PM-SQ	PM-SQ-1	PM-HX-3	PM-HX-3	PH-3	RTF	PM-HX-3	PH-3
MAX SIZE	40"	50"	40"	60"	60"	60"	60"	60"
IDEAL DRIVES	1MDS-40D	1MDS-40DS	1MDS-40D	40D-70D	40D-70D	40D-70D	90D-140D	90D-140D
OPTIMUM DRILLING SPEEDS (RPM)								
EARTH	55-65	55-65	55-65	55-65	55-65	N/A	55-65	55-65
CLAY	45-55	45-55	45-55	45-55	45-55	N/A	45-55	45-55
SHALE (FRACTURABLE ROCK)	20-45	20-45	20-45	25-45	25-45	25-45	25-45	25-45
HEAVY ROCK	N/A	N/A	N/A	N/A	N/A	10-25	N/A	10-25

#### MACHINES 4.5T - 15T

MODELS: TRACTOR DRILLERS, MINI EXCAVATOR, TRUCK CRANES, CRAWLERS, BACKHOES, TELEHANDLERS

MODEL	COMBO ROCK/EARTH			ROCK AUGER			COMBO ROCK/EARTH	
	A6	RC6	DR6	A8	RC8	DR8	A8	RC8
DRILLING CONDITIONS	GENERAL	GENERAL	COMBO ROCK/EARTH	GENERAL	COMBO ROCK/EARTH	ROCK AUGER	GENERAL	COMBO ROCK/EARTH
HEB	2" Hex	2" Hex	2" Hex	2.5" Hex	2.5" Hex	2.5" Hex	3.5" Hex	2.5" Hex
OPTIONAL HUB	2 7/8" Round	2 7/8" Round	2 7/8" Round	2 7/8" Hex	2 7/8" Hex	2 7/8" Hex	3" Hex	2 7/8" Hex
DIAL	40"	40"	40"	60"	60"	60"	60"	60"
PIPE	2.375" - 4.5"	2.375" - 4.5"	2.375" - 4.5"	3" - 5.5"	3" - 5.5"	5.1" hollow bar	3" - 6.5"	3" - 6.5"
FLIGHTS (Pitch)	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	3/8"	3/8"
FLIGHTS (Camp)	5/16"	5/16"	5/16"	5/16"	5/16"	5/8"	3/8"	3/8"
TEETH	TS	DP-40/50, DP-40/50HFF, DP-40/50C	TTD/TTS	TM	TTD/TTS	3/4" Rock Pick	TM	TTD/TTS
Pilot	PM-SQ	PM-SQ-1	PM-HX-3	PM-HX-3	PH-3	RTF	PM-HX-3	PH-3
MAX SIZE	40"	50"	40"	60"	60"	60"	60"	60"
IDEAL DRIVES	1MDS-40D	1MDS-40DS	1MDS-40D	40D-70D	40D-70D	40D-70D	90D-140D	90D-140D
OPTIMUM DRILLING SPEEDS (RPM)								
EARTH	55-65	55-65	55-65	55-65	55-65	N/A	55-65	55-65
CLAY	45-55	45-55	45-55	45-55	45-55	N/A	45-55	45-55
SHALE (FRACTURABLE ROCK)	20-45	20-45	20-45	25-45	25-45	25-45	25-45	25-45
HEAVY ROCK	N/A	N/A	N/A	N/A	N/A	10-25	N/A	10-25

CUSTOM AUGER BUILDS ARE OUR SPECIALTY. CALL US TO DISCUSS YOUR REQUIREMENTS

## Extensions and Mounts

### EXTENSIONS

DIGGA MANUFACTURE A HEAVY DUTY RANGE OF AUGER EXTENSIONS - ENGINEERED FOR STRENGTH & DURABILITY

2" HEX EXTENSION	MINI TELESCOPE EXTENSION	HEAVY DUTY EXTENSION
N/A	2 FT	2 FT
N/A	4 FT	4 FT
N/A	6 FT	6 FT
N/A	8 FT	8 FT
N/A	10 FT	10 FT
N/A	N/A	10 FT

3" HEX EXTENSION	MINI TELESCOPE EXTENSION	HEAVY DUTY EXTENSION
4 FT	4 FT	4 FT
6 FT	6 FT	6 FT
8 FT	8 FT	8 FT
10 FT	10 FT	10 FT
N/A	N/A	10 FT

3" HEX EXTENSION	MINI TELESCOPE EXTENSION	HEAVY DUTY EXTENSION
N/A	4 FT	4 FT
N/A	6 FT	6 FT
N/A	8 FT	8 FT
N/A	10 FT	10 FT

100MM SQUARE TELESCOPIC EXTENSIONS TO SUIT 50 HP UP TO 30,000 FT LBS OF TORQUE

100MM SQUARE TELESCOPIC EXTENSION	MINI TELESCOPE EXTENSION	HEAVY DUTY EXTENSION
6 FT	6 FT	6 FT
8 FT	8 FT	8 FT
10 FT	10 FT	10 FT

100MM SQUARE HEAVY DUTY EXTENSION TO SUIT 50 HP UP TO 30,000 FT LBS

100MM SQUARE HEAVY DUTY EXTENSION	MINI TELESCOPE EXTENSION	HEAVY DUTY EXTENSION
N/A	6 FT	6 FT
N/A	8 FT	8 FT
N/A	10 FT	10 FT

Extensions can be sold separately or as a telescopic kit

### TELESCOPIC EXTENSION MOUNT

NEED THAT EXTRA REACH? EFFECTIVELY INCREASING YOUR REACH FOR ADDED DRILLING DEPTH OR HELICAL PILE INSTALLATION

- Designed to be used with drives up to 10,000 FT/LB
- Unique design gives the operator greater range & visibility



# Electrical Solution.

Komponen elektrikal untuk optimalisasi alat berat saat beroperasi.



# 01. Power Spot LED.



**500W**



- Input Voltage AC 85-265V 50-60 HZ
- LED Power 500W
- Lamp Power 480-500W
- Driver 2 pcs MEANWELL
- LED Type CREE (USA)
- Luminous Flux 100-110 LM/W
- CRI ≥ 80 Power Efficiency ≥ 0.92
- Lamp Effectiveness > 92%
- Working Temperature -40-60°
- Ambient Humidity 10%-90%
- Warranty : 3 Tahun

Reflectors beam angle  
25°, 45°, 60°, 90°, 100°

Cooper heatpipe

Respirator design

Adjustable angle



# Electrical Solution.

Power (W)	Voltage (V)	Current (mA)	Chip Model	Way of Series - Parallel	PCB'S size	Driver
100	32	2800	3020 (200 PCS)	20P10S	Ø110*2.0(mm)	HLG-100H-36A
120	32	3400	3020 (260 PCS)	26P10S		HLG-120H-36A
150	45	3000	CREE-XBD (90 PCS)	6P15S	Ø110*2.0(mm) Ø132*2.0(mm)	HLG-150H-48A
200	32	5600	3020 (300 PCS)	30P10S		HLG-150H-36A
300	39	4600	CREE-XBD (130 PCS)	10P13S	Ø110*2.0(mm) Ø132*2.0(mm)	HLG-240H-42A
	36	7500	3020 (380 PCS)	38P10S		HLG-240H-36A
400	30	9000	CREE-XPE (160 PCS)	2*(8P10S)	Ø132*2.0(mm)	HLG-150H-36A (2PCS)
	36	7500	CREE-XBD (192 PCS)	2*(8P12S)		Ø110*2.0(mm)
500	42	8500	CREE-XBD (280 PCS)	2*(10P14S)	Ø110*2.0(mm)	HLG-240H-42A (2PCS)
	42	11000	CREE-XBD (280 PCS)	2*(10P14S)		Ø110*2.0(mm)



# Electrical Solution.

## 01. Power Spot LED.

Mobile Tower Lamp, 1500W Metal Halide vs LED Power Spot 300W & 500W



Life	8000-12000H	50000H
Startup Time	5-10Min	Instant
Starting current	Very high High inrush current electrical appliances	Low
Intelligent control	Uncontrol	Arbitrary Control
Color rendering index	65 or so	80 above
Ultraviolet (uv) content	34% Not appropriate to use the ball in from close range	No

Jenis Lampu	8m (lux)	34m (lux)
Metal Halide 2 x 1500W	399	63
Metal Halide 1 x 1500W		14
Power Spot LED 2 x 300W (full RPM)	600	64
Power Spot LED 2 x 300W (RPM turun)	645	
Power Spot LED 1 x 300W (full RPM)	114	39
Power Spot LED 1 x 300W (RPM turun)		
Power Spot LED 2 x 500W (full RPM)	829	95
Power Spot LED 2 x 500W (RPM turun)	858	98
		42 (50m)
Power Spot LED 1 x 500W (full RPM)	149	55
Power Spot LED 1 x 500W (RPM turun)	147	

Workshop, 6 x 1500W Metal Halide vs LED Power Spot 6 x 150W



# 01. Power Spot LED.

# Electrical Solution.

## LED Power 60W



Construction	Die cast aluminum housing
Finish	Black powder coat
Hardware	Stainless steel
Lens	Impact-resistant polymer Spot (SP) and flood (FL) optics Precise optical control minimizes glare
Light source	Cree light emitting diodes (LED) Effective lumens: up to 4500 lumens (60W) CCT 6000K 50,000 hour rated life
Power source	12-48V DC 10.00 inch cord with Deutsch connector Over-voltage , over-temperature and reverse polarity protection
Wiring	Stranded wires
Ambient operating temperature	-40°C to +65°C Light output regulation in high ambient temperature environments protects the life of the LEDs
Shock	65G along 3 axes
Vibration	5 Grms, 100-2200Hz along 3 axes
Salt spray	Tested to ASTM B117 for 1000 hours
Aiming	90° aiming capability
Mounting	Stainless steel harp
Weight	E56 fixture: 4.2 lb (1.9 kg) case (6 fixtures): 22.0 lb (10.0 kg)
Case size	E56: 20.47 in x 7.87 in x 9.84 in (520 mm x 200 mm x 250 mm)
Warranty	1 year CE IP69K

## Type 6482 48W



- LED's: 16 pcs\*3W, high intensity USA CREE LED
- Light output about 3600lm
- Voltage: 10V-30V DC
- Water-proof: Ip67
- Beam: spot beam or flood beam
- Color temperature: 600K
- Material: Diecast aluminium housing
- Lens material: PMMA
- Mounting bracket: Stainless steel
- Operating Environment: -40~+50°C
- Certificates: CE RoHS E-mark

# Electrical Solution.

## 01. Power Spot LED.

### Type 7120 120W



120W FLOOD/SPOT BEAM

- Power: 120W
- Leds: 12pcs\* 10W CREE XML-2 LEDs
- Color temperature: 6000K
- Beam pattern: flood beam (45°) or spot beam
- Raw lumens: 11640lm
- Up to 50000 hours life span
- Input voltage: 10-30V DC
- Operation temperature: -40°C ~+ 60°C
- Waterproof rating: IP67
- Unbreakable Polycarbonate with Anti UV
- With famous equalizing vent (military breather)
- Reverse polarity protection
- Overheat protection
- RoHS compliant
- Durable UV Polyester powder coat
- Die casting housing
- 304# stainless steel mounting brackets & screws

### Type 6090 90W



90W FLOOD/SPOT BEAM  
DT connector integrated into the light

- Power: 90W
- Leds: 9pcs\* 10W CREE XML-2 LEDs
- Color temperature: 6000K
- Beam pattern: flood beam (45°) only
- Raw lumens: 8730lm
- Up to 50000 hours life span
- Input voltage: 10-30V DC
- Operation temperature: -40°C ~+ 60°C
- Waterproof rating: IP67
- Unbreakable Polycarbonate with Anti UV
- With famous equalizing vent (military breather)
- Reverse polarity protection
- Overheat protection
- RoHS compliant
- Durable UV Polyester powder coat
- Die casting housing
- 304# stainless steel mounting brackets & screws
- Certificates: CE, RoHS

## 01. Power Spot LED.

### Type WL-6511



- LED Power: 51W
- Voltage/current draw: 10-30 V DC, 4.25A @12V, 2.13A @24V  
LEDs: 17pcs\*3W (CREE LED)
- Material: Aluminium alloy die-casting shell, tempered glass, stainless steel glass, stainless steel stent
- Color temperature: 6000K
- Waterproof: Ip67
- Working life: 30000 hours
- Optional beam: Flood 60° Spot 30°
- Lumens: 3700lm
- Vibration: 20G rms from 24 to 2000Hz

### Type WL-6271



- LED Power: 27W
- LEDs: 9pcs\*3W (Epistar LED)
- Operating volt: 10-30 VDC, 2.25A @12V, 1.13A @24V
- Working temperature: -40°C ~ 60°C
- Material: Alloy die-casting, PC mirror, stainless steel stent
- Color temperature: 6000K
- Waterproof: IP67
- Optional beam: Flood 60° Spot 30°
- Lumens: 2150lm

# Electrical Solution.

## 02. Street Lamp.

**LD4C-3**

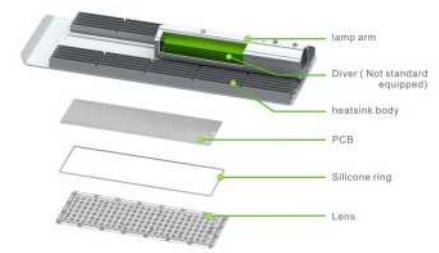
**LD4C-2**

**LD4C-1**

Model	Power (w)	Voltage (V)	Current (A)	LED chip	LED Qty (pcs)	Parallel	Beam angle	Dimension
LD4C-1	10-30	54	0,55	Philipx 3030	36	4P 95	150*70"	342*136*83
LD4C-2	40-50	114	0,52	Philipx 3030	76	4P 195	150*70"	431*160*83
LD4C-3	50-100	95	1,0	Philipx 3030	112	7P 165	150*70"	632*215*84

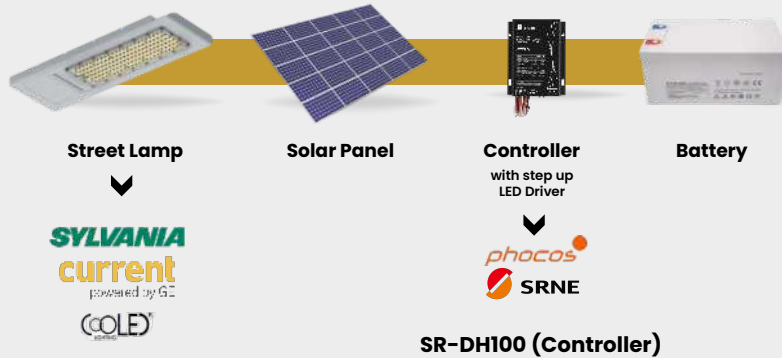
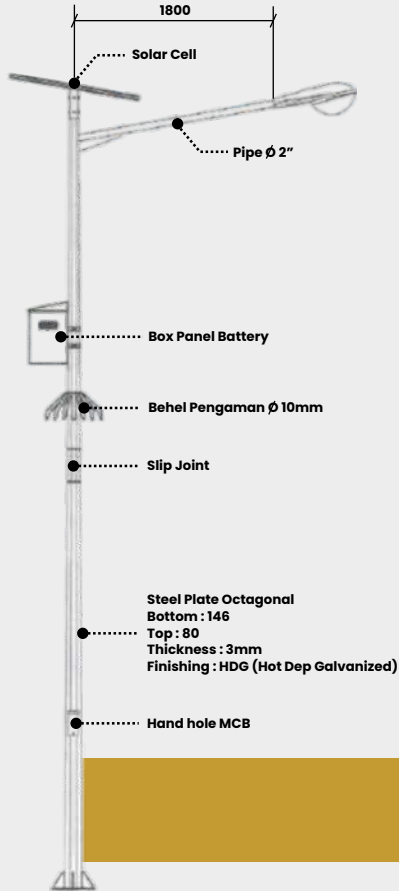


LED heatsink + lighting engineering solution provider





### 03. Solar Street Lamp.



Parameter Name	Parameter Value
System Voltage	12V/24V
Output Power	50W/12V 100W/24V
Output Current	0.15A ~ 3.3A
No-load loss	9mA/12V; 12mA/24V
Charging Current	15A
Solar input Voltage	< 55V
Efficiency of constant current	90% - 96%
Overvoltage protection	16.0V; x2/24V
Charging limits voltage	15.5V; x2/24V
Equal charging voltage	15.2V; x2/24V (25°C)
Equal charging interval	30 days
Ascending charging voltage	14.2V ~ 15.0V; x2/24V (25°C)
Float charging voltage	13.2V ~ 14.0V; x2/24V (25°C)
Over-discharging recover voltage	12.0V ~ 13.0V; x2/24V
Over-discharging voltage	9.8V ~ 11.8V; x2/24V
Temperature compensation	-4.0mV/°C/2V
Current precision	±3% (Load current > 300mA)
Load output voltage	< 60V
Over-temperature protection	Ambient temperature: 80°C (load drop power)
Overheat protection	Internal temperature: 120°C (Load off)
Light control voltage	5V ~ 11V
Light control delay	5 min ~ 50 min
Working temperature	-35°C ~ +65°C
Protection level	IP68
Weight	280g
Dimension (mm)	100*82*20

# Electrical Solution.



## 04. Wiring Harness.

# Electrical Solution.

Kami juga menyediakan stock aneka wiring harness untuk kebutuhan unit alat berat anda dengan kualitas bagus, bergaransi, dan harga terjangkau.



# Energy Solution.

Sumber energi untuk keberlangsungan operasional alat berat.



# 01. Battery Free Maintenance HD



Battery dengan merk HD Tech, *Battery lithium-ion* dengan teknologi modern serta kulit yang handal dan memiliki ketahanan yang baik dalam menawarkan performa tinggi yang cocok digunakan untuk kendaraan, alat berat dan sumber energi cadangan lainnya.

## 01.

### Teknologi Terdepan untuk Performa Terbaik

HD Tech Battery didukung oleh teknologi terkini dengan menggunakan bahan-bahan berkualitas tinggi dan proses produksi yang canggih, baterai ini dirancang untuk memberikan performa yang luar biasa sehingga menjadi pilihan tepat bagi para pengguna yang mengutamakan daya tahan dan efisiensi energi dalam berbagai aplikasi.

## 02.

### Beragam Pilihan Produk HD Tech Battery

Merek ini menawarkan beragam produk baterai untuk memenuhi kebutuhan berbagai konsumen. Mulai dari baterai portabel untuk perangkat elektronik hingga baterai cadangan daya untuk rumah atau bisnis, HD Tech hadir dalam berbagai kapasitas dan jenis. Pengguna dapat memilih produk yang sesuai dengan kebutuhan energi mereka dan memastikan mereka selalu terhubung dengan dunia digital.

## 03.

### Keandalan dan Keamanan

HD Tech telah terbukti menjadi pilihan yang andal dan aman dalam mendukung kebutuhan energi. Dengan dilengkapi fitur keamanan canggih, baterai ini melindungi perangkat elektronik dari potensi risiko seperti overcharging, overheating, dan short circuit. Keandalan ini memberikan ketenangan pikiran bagi pengguna karena mereka dapat mengandalkan baterai HD Tech dalam situasi darurat atau pemadaman listrik.

## 04.

### Ramah Lingkungan

HD Tech menunjukkan komitmen terhadap keberlanjutan dengan menghadirkan produk-produk yang ramah lingkungan, mengurangi dampak negatif pada lingkungan, dan menciptakan dunia yang lebih hijau.

## 05.

### Dukungan Pelanggan dan Garansi

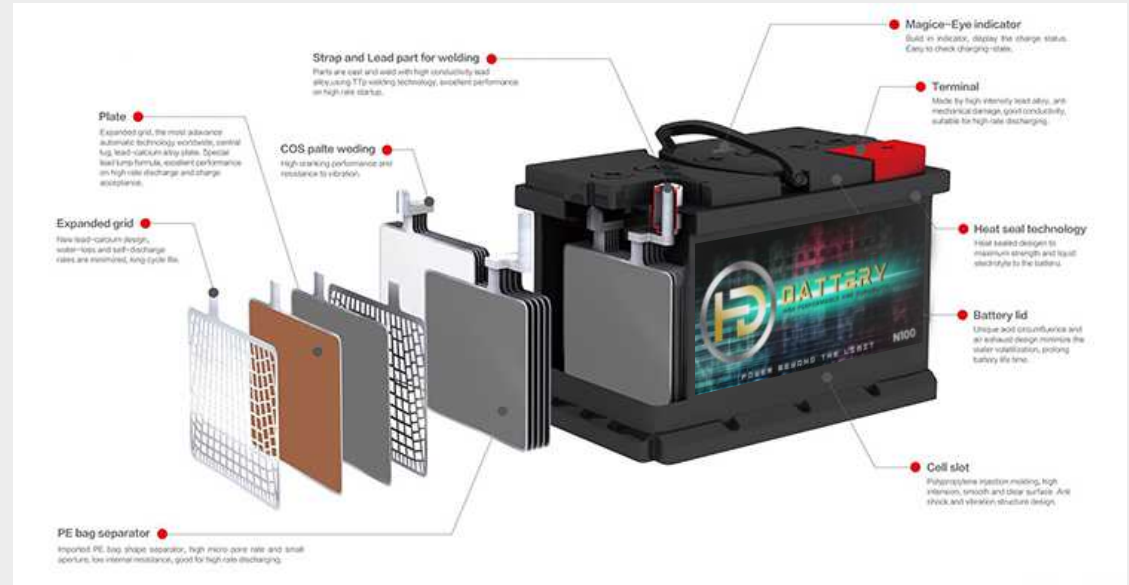
Memberikan layanan pelanggan yang baik dengan dukungan yang responsif dan bantuan teknis untuk para pelanggan. Selain itu, produk juga didukung garansi yang memberikan kepercayaan bagi pengguna terhadap kualitas dan kinerja baterai.

## 06.

### Manfaat lainnya

- Daya tahan baterai yang lebih lama, memungkinkan pengguna untuk menggunakan perangkat lebih lama tanpa perlu sering mengisi daya.
- Performa yang lebih baik, mengurangi risiko penurunan performa perangkat karena daya baterai yang menipis.
- Pengurangan panas berlebih, menjaga suhu perangkat tetap optimal untuk kinerja yang lebih baik dan umur baterai yang lebih panjang.
- Pengoptimalan pengisian daya, menghindari risiko kerusakan baterai akibat pengisian yang berlebihan.
- Pengalaman pengguna yang lebih lancar dan bebas dari gangguan karena baterai yang cepat habis.

# Energy Solution.



Battery berfungsi sebagai sumber energi listrik setiap saat pada kendaraan bermotor sehingga sering disebut Baterai SLI (*Starting, Lighting, Ignition*). Accu bekerja dengan mengubah energi kimia menjadi energi listrik dengan komponen utama *Lead - Acid*. Jenis Accu terbagi menjadi 2, yaitu :

### Accu Basah (Wet Charge Battery)

Accu yang dijual sudah terisi elektrolitnya dan langsung bisa dipergunakan.

### Accu Kering (Dry Charge Battery)

Accu yang dijual dalam kondisi kering belum terisi elektrolit. Accu ini bisa langsung digunakan setelah diisi elektrolit tanpa perlu di charging.

# 01.

## Battery Free Maintenance HD

Part No	AH	CCA	Berat (Kg)	Dimensi (mm)			Persamaan Tipe
75D31RMF	70	620A	21,2	305	172	202	65D31 , 75D31 , 95D31
75D31LMF	70	620A	21,2	305	172	202	65D31 , 75D31 , 95D31
100D31RMF	100	700A	21,9	305	172	202	CAT 3T5760 , 115D31
N100RMF	100	900A	28,9	406	169	205	N100
CV120	120	1000A	29,7	406	169	205	China brand truck and heavy equip
N120	120	1000A	35,2	504	180	211	N120
HD180RMF	180	1300A	41,4	507	220	213	DIN 170 , N150
HD180LMF	180	1300A	41,4	507	220	213	DIN 170 , N150
HD200ACR	200	1400A	45,7	508	216	201	CAT 153-5710 , Bosch 4D-1400
HD200ACL	200	1400A	45,7	508	216	201	CAT 153-5710 , Bosch 4D-1400
N225RMF	225	1500A	52,5	509	264	217	N225
N225LMF	225	1500A	52,5	509	264	217	N225

# Energy Solution.



## 02. Generator Set.

# Energy Solution.

Generator Set tipe Silent dan Open mulai dari 10 KVA – 10.000 kva  
Bergaransi  
Layanan after sales  
Harga terjangkau



Powered by :

**VOLVO**

**YANMAR**

**PERKINS**

**POWERED BY A  
CUMMINS ENGINE**

**HDE**  
HARTECH DIESEL ENGINE

## 02. Generator Set.

# Energy Solution.

### Service Rental dan Maintenance



#### Instalasi Genset

Panel ATS/AMF  
Switch Genset PLN  
Pengkabelan



#### Service

Overhaul  
Kalibrasi  
Nozele  
Engine



#### Maintenance

Pergantian Filter  
Pergantian Oil  
Pergantian Coolan  
Pengecekan Daya

# Filter Solution.

Perawatan filter udara cepat dan aman untuk mendukung performa mesin.





# 01. Recycleclean Air Filter.

# Filter Solution.

## Your Air Filter Re-Cycleclean

Merawat semua kebutuhan filter udara anda dengan cepat, aman, ekonomis, dan ramah lingkungan.



Reduce



Reuse



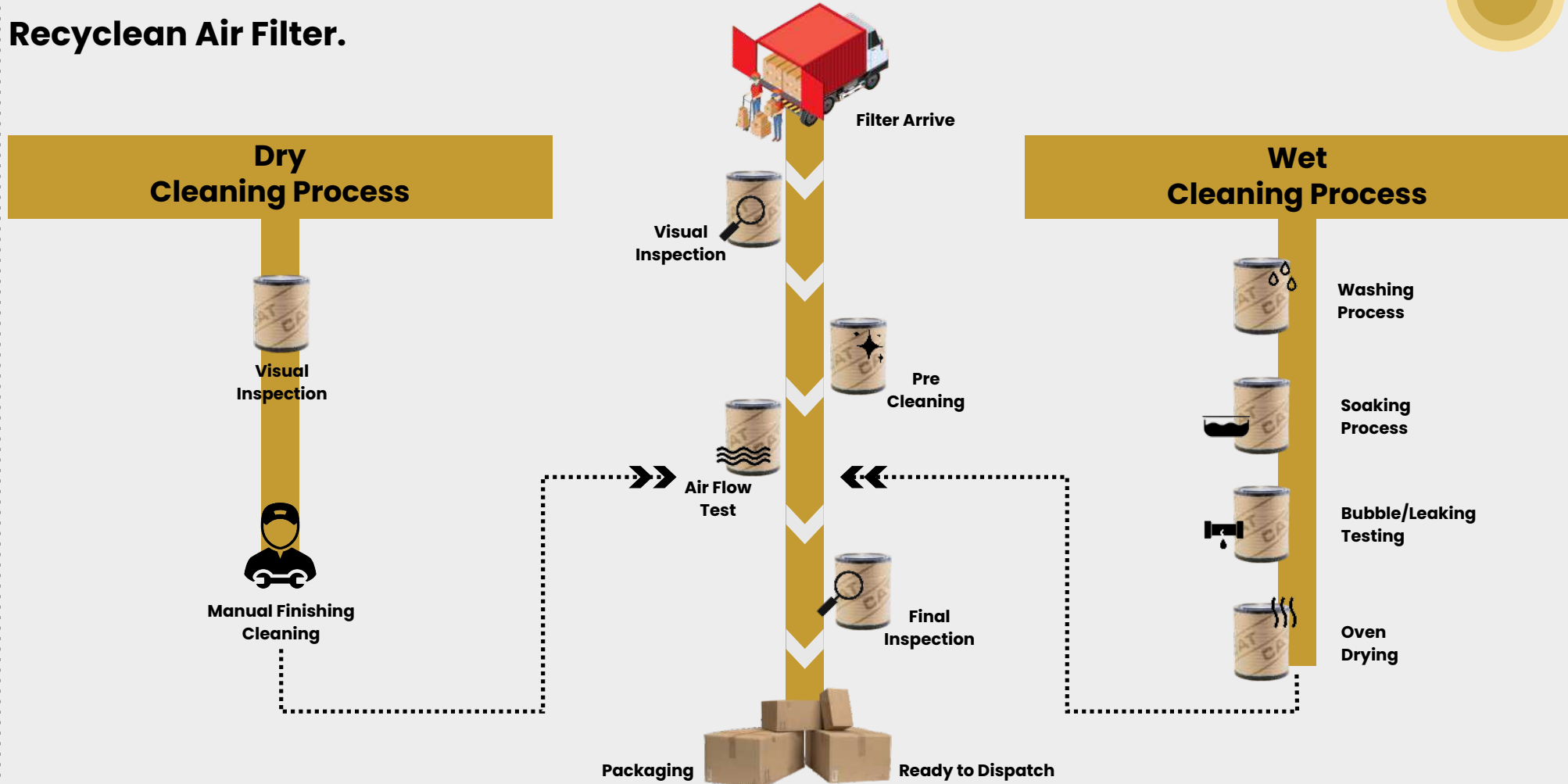
Recycle

**Air Filter Wet Cleaning Specialist**



# 01. Recycleclean Air Filter.

# Filter Solution.



# 01. Recycleclean Air Filter.

# Filter Solution.

## PROSES RECYCLEAN AIR CLEANER



**Filter Receiving**



**Minor Repairing**



**Pretest/Leaking Test**



**Prewash**

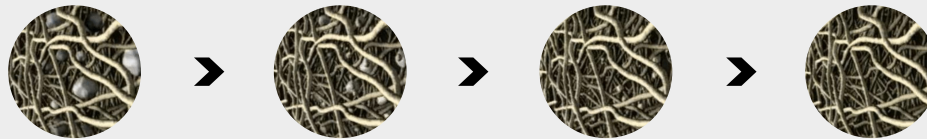
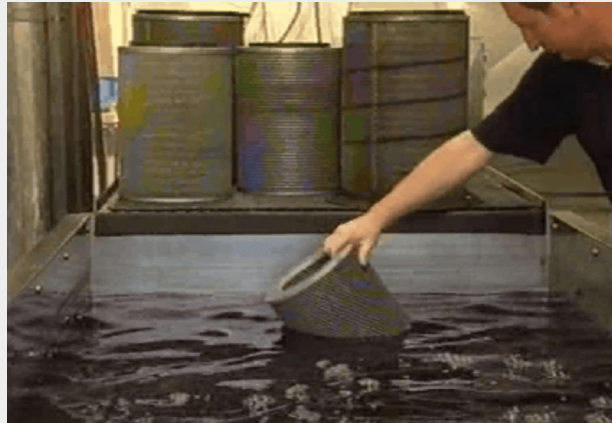
**5**  
Menit



# 01. Recycleclean Air Filter.

# Filter Solution.

## CHEMICAL SHOCKING/CHEMICAL PROCESS



**3**  
Jam



# 01. Recycleclean Air Filter.

# Filter Solution.



Prewash



Pretest/Leaking Test



Spinning

**5**  
Menit



# 01. Recycleclean Air Filter.

# Filter Solution.

Oven/Drying



20  
Jam



# 01. Recycleclean Air Filter.

# Filter Solution.

Ready to Delivery



Packaging



## 01. Recycle Air Filter.

### Proses Penggantian Filter di Unit

Reclean



Reclean



Baru



Before



After





# 01. Recyclean Air Filter.

# Filter Solution.

## Profitable Re Cyclean Air Filter



## 02. Filter.

# Filter Solution.

Kami juga menyediakan Filter Baru untuk mendukung operasional anda dengan harga yang terjangkau.



# Fabrication Solution.

Mengerjakan berbagai macam produk fabrikasi sesuai dengan permintaan.



# Fabrication Solution.

## Work Experience.



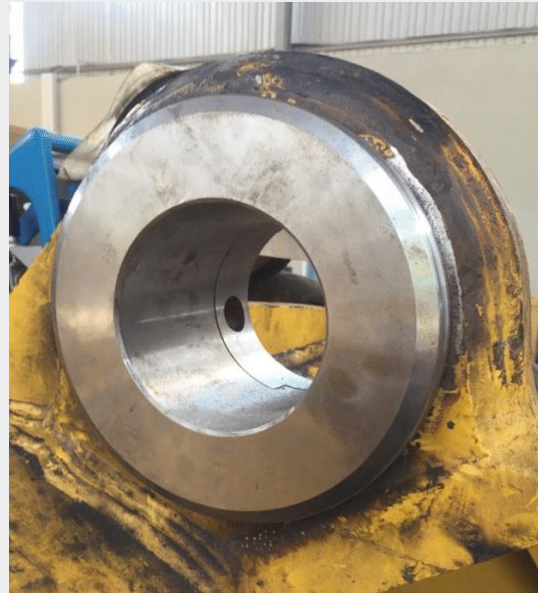
### PT. LAHAI GAS & SERVICES FUEL FILTERATION PROJECT



# Fabrication Solution.

## Work Experience.

### LINE BORING



### FABRIKASI BUCKET



# Fabrication Solution.

## Work Experience.

**LINE PONTOON**



**FABRIKASI TANKI 40 KL**



# Fabrication Solution.

## Work Experience.

### FABRIKASI BUCKET KOMATSU PC 1250 - 8R KAPASITAS 6,7 M<sup>3</sup>



# Fabrication Solution.

## Work Experience.

### EXTENSION BUCKET KOMATSU PC 1250 DARI 6,7 M<sup>3</sup> KE 7,2 M<sup>3</sup>

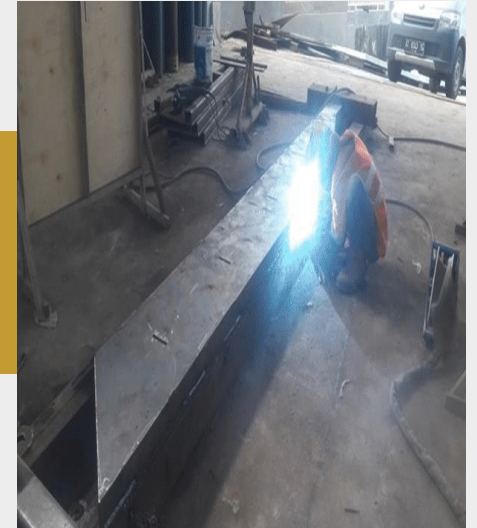




# Fabrication Solution.

## Work Experience.

### FABRICATION & INSTALLATION TAIL GATE DT & HD



# Fabrication Solution.

## Work Experience.

### FABRICATION ROCK EJECTOR & PANTOON



# Fabrication Solution.

## Work Experience.



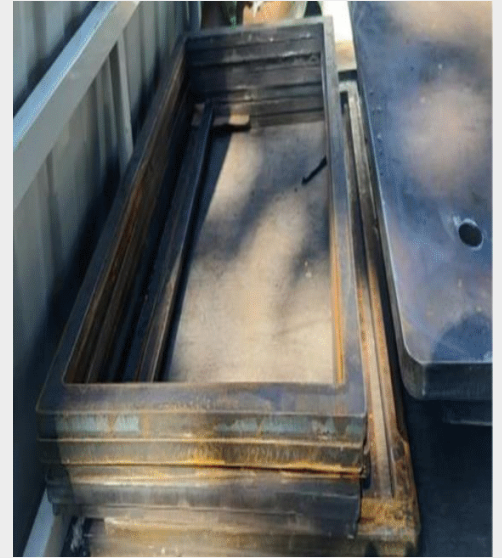
## FABRICATION MAIN TANK



# Fabrication Solution.

## Work Experience.

**CUTTING PLATE 32 MM, 25 MM, 20 MM, 16 MM, DAN 6 MM**



# Fuel Solution.

Bahan bakar efisien untuk meningkatkan performance pada mesin alat berat.





## PETRODIESEL VS BIODIESEL (BIOSOLAR)

### KALORI DARI BIOSOLAR YANG LEBIH KECIL 10%- 15%

Pemakaian BBM akan lebih boros karena energi yang dihasilkan lebih sedikit.

### BIOSOLAR LEBIH BANYAK KONTAMINASI AIR

Akan lebih mudah menyebabkan karat, dan mengurangi efisiensi pembakaran.

### BIOSOLAR RENTAN TERHADAP PERTUMBUHAN ALGAE / GANGGANG

Algae/ganggang yang terus bertumbuh dalam BBM solar akan terus mengurangi kualitas solar sehingga efisiensi dan performa pembakaran menurun.

### KUALITAS BIOSOLAR YANG BELUM BAIK

BBM yang kotor dapat menyumbat Filter sehingga umur filter pendek. Deposit sisa pembakaran menjadi lebih banyak sehingga mengotori bagian pembakaran termasuk Injektor.

Blends of biodiesel and conventional hydrocarbon-based diesel are products most commonly distributed for use in the retail diesel fuel marketplace. Much of the world uses a system known as the "B" factor to state the amount of biodiesel in any fuel mix:

- ✓ 100% biodiesel is referred to as B100
- ✓ 20% biodiesel, 80% petrodiesel is labeled B20
- ✓ 5% biodiesel, 95% petrodiesel is labeled B5
- ✓ 2% biodiesel, 98% petrodiesel is labeled B2

# Fuel Solution.

## PROBLEM DARI PENGGUNAAN BIODIESEL DI INDONESIA

### POWER LOSS

Kalori yang lebih kecil berarti power yang lebih rendah dan kualitas biosolar yang beredar cukup rendah menyebabkan performa yang lebih menurun lagi.

### KERUSAKAN PADA INJEKTOR

Deposit kotoran, sulfur dan kontaminasi air memperpendek umur injektor secara signifikan.

### POMPA BBM YANG RUSAK

Bakteri dan kotoran-kotoran lain akan menjadi lumpur dalam solar dan akan menyumbat serta merusak pompa BBM.

### FILTER DAN YANG TERSUMBAT

Kotoran-kotoran dan ganggang yang tumbuh dalam BBM akan membentuk lumpur yang menyumbat filter, sehingga akan harus sering diganti.

### ASAP YANG BANYAK

Kotoran, ganggang dan air akan membuat solar lebih sulit terbakar dengan baik, yang menyebabkan banyaknya asap pembuangan.

### DEPOSIT KOTORAN YANG MENUMPUK

Banyaknya kontaminasi kotoran dan kadar sulfur yang tinggi dalam biosolar indonesia akan menyebabkan penumpukan deposit kotoran di ruang pembakaran.



FUNGSI  
**CTXDIESEL**  
**1**

**MENJAGA KEBERSIHAN INJEKTOR DAN RUANG PEMBAKARAN**

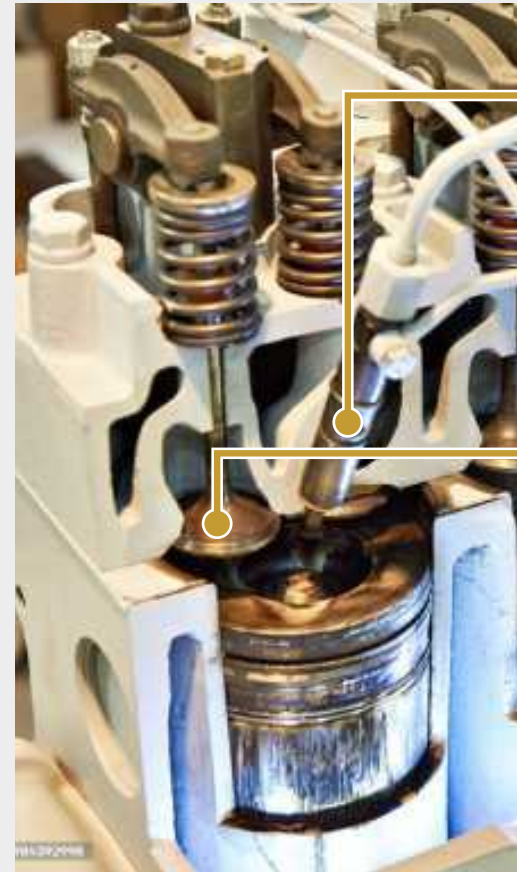
injektor akan mengurangi performa mesin dan menyebabkan :

- pengurangan kualitas pola semprotan
- berkurangnya tenaga mesin
- banyak asap
- pemborosan BBM
- meningkatnya emisi

penambahan CTX diesel akan membuat pola semprotan yang baik, sehingga memaksimalkan perbandingan antara udara dan BBM, membuat kualitas pembakaran menjadi lebih baik. Dengan pembakaran yg lebih baik, deposit kotoran yang mengendap juga akan berkurang. Penumpukan kotoran di dalam ruang pembakaran, khususnya di bagian Valve, akan menyebabkan kompresi di ruang pembakaran yang menurun karena valve yang tidak dapat tertutup rapat. Akibatnya tenaga akan berkurang secara signifikan.



# Fuel Solution.



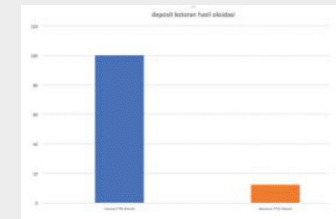
Perbandingan antara pola semprotan injektor yang tersumbat dan yang bersih.



Contoh klep (valve) dimana deposit kotoran sisa pembakaran sering mengendap.



Penggunaan CTX diesel membuat mesin lebih bersih 87,5%.



■ tanpa CTX Diesel ■ dengan CTX Diesel

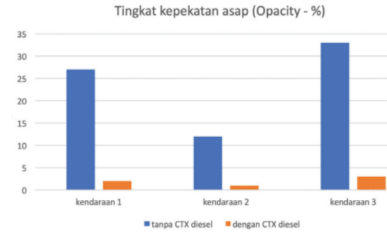


# Fuel Solution.

FUNGSI  
**CTXDIESEL**  
**2**

**MENGURANGI ASAP**

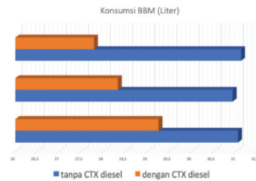
CTX Diesel membantu membersihkan ruang pembakaran, mencegah tumbuh dan berkembangnya ganggang/ bakteri dalam BBM solar, sehingga akhirnya pembakaran dapat berlangsung dengan lebih sempurna, yang bisa dikenali dengan berkurangnya asap hasil pembakaran. Asap menjadi lebih transparan dan ramah lingkungan.



FUNGSI  
**CTXDIESEL**  
**4**

**PENGGUNAAN BBM YANG LEBIH HEMAT**

CTX diesel membantu pembakaran dalam mesin menjadi lebih sempurna, sehingga menghasilkan tenaga yang lebih besar dan penggunaan bahan bakar yang lebih ekonomis. Penggunaan CTX diesel sudah teruji memberikan penghematan BBM sebanyak minimal 5%.

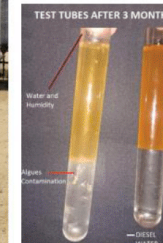


FUNGSI  
**CTXDIESEL**  
**3**

**TERUS MENJAGA KUALITAS SOLAR TETAP PRIMA**



Solar yang ditampung di tangki penampungan baik di mobil atau tangki industri sangat rentan terhadap kontaminasi. Keadaan iklim Indonesia yang lembap menyebabkan akumulasi kondensasi air di dalam tangki penampungan. Kandungan air dan ganggang / bakteri dalam solar, khususnya pada biosolar, menurunkan kualitas solar dan dapat berubah menjadi lumpur yang menumpuk di dalam tangki.



Tabung reaksi (kiri) adalah solar yang dicampurkan dengan air, terlihat banyak kondensasi air dan algae (ganggang) bertumbuh cukup banyak hanya dalam waktu 3 bulan. Terlihat warna solar juga berubah karena kontaminasi.

Tabung reaksi (kanan) adalah solar yang dicampurkan dengan air dan CTX diesel, terlihat jauh lebih bersih, tidak ada kontaminasi algae dan kualitas solar lebih terjaga dengan baik.



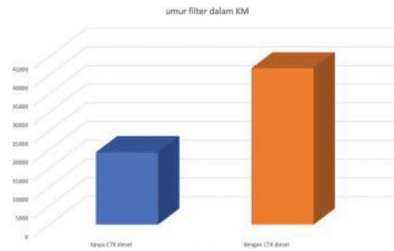
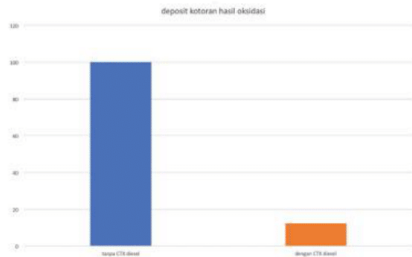


# Fuel Solution.

## FUNGSI CTXDIESEL 5

### FILTER DAN POMPA BAHAN BAKAR YANG LEBIH AWET

Solar/Biodiesel yang digunakan di Indonesia kualitasnya rendah. Banyak kotoran dan bakteri berkembang dalam solar yang dapat membentuk lumpur di dasar tangki, lumpur tersebut akan menyumbat filter bahan bakar dan merusak pompa. Ini merupakan salah satu masalah utama yang banyak dihadapi pengusaha di bidang pengangkutan dan alat-alat berat. CTX diesel membersihkan kotoran dan bakteri dalam Biodiesel sehingga lumpur tidak terbentuk dan filter serta pompa dapat bertahan lama.

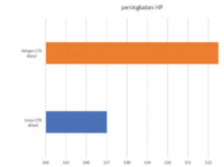


Mesin yang menggunakan CTX diesel terbukti menghasilkan deposit kotoran 87,5% lebih sedikit, dan umur filter dapat diperpanjang 2 hingga 3 kali lebih lama

## FUNGSI CTXDIESEL 6

### MENAMBAH POWER DAN PENINGKATAN CETANE NUMBER

Peningkatan Cetane number yang diberikan CTX diesel memberikan tenaga yang lebih besar kepada mesin anda. Telah teruji CTX diesel memberikan peningkatan tenaga sebanyak 3% - 5%. Kerja mesin akan menjadi lebih efisien dan ekonomis.



#### TAKARAN PENGGUNAAN

**ONE TANK CLEAN-UP** (pemakaian pertama)  
100 : 1 (tiap 1L solar campurkan 10ml CTX diesel)

**DAILY USE** (pemakaian sehari-hari)  
1000 : 1 (tiap 1L solar campurkan 1ml CTX diesel)

#### TERSEDIA DALAM UKURAN

35ML	100ML	250ML	1000ML
------	-------	-------	--------

## HEFO

### HEFO FUEL OPTIMIZER.



#### Tentang HEFO.

- 01.** Alat ini dipasang pada semua jenis alat berat yang menggunakan tegangan batteray **24 Volt**.
- 02.** Memperbaiki **charging system** pada unit dan bekerja meningkatkan supply listrik yang dihasilkan alternator serta mengurangi kebocoran arus pada siklus pengisian batteray, menghemat arus beban batteray sehingga masa pakainya lebih panjang.
- 03.** Alat ini **intercept** (mengurangi frekuensi perintah) ECM ke alternator untuk melakukan pengisian batteray dan mengurangi arus yang besar pada saat alat akan di starting.
- 04.** Alat ini menjadi **booster electric** (tegangan reaktif) untuk membuka solenoid/needle valve di dalam injector sehingga terjadi pengabutan di ruang bakar lebih maksimal.
- 05.** Alat ini meringankan beban mesin akibat beban kerja Altenator Compressor AC, Fuel Pump, Sensor dan komponen listrik lainnya sehingga **torsi mesin lebih ringan**.

## HEFO

### HEFO FUEL OPTIMIZER.

#### Manfaat HEFO.

##### 01. Boost Supply Electric System to Injector

Tenaga engine lebih responsive, torsi lebih ringan karena alternator tidak perlu bekerja berat saat pengisian battery.

##### 02. Economizing Fuel Consumption

Menghemat bahan bakar mesin 10% - 20% dari normal tergantung usia alat, pengoperasian dan area kerja.

##### 03. Power Up and More

Pada alat berat yang menggunakan ECM, kerja AC dan sensor unit lebih baik karena electric bisa bekerja pada tegangan optimal.

#### Cara Pasang HEFO.



##### Terminal Hitam:

dihubungkan ke terminal negative battery.



##### Terminal Merah:

dihubungkan ke terminal positive battery.



##### Terminal Kuning:

dihubungkan ke tegangan positive kabel acc.



##### Terminal Biru:

optional, dihubungkan ke LED (optional).

Pemasangan HEFO sangat praktis, mudah dan cepat hanya butuh 10 menit.

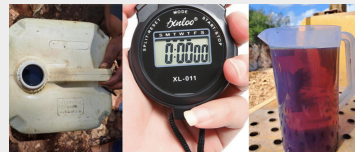
## HEFO

### HEFO FUEL OPTIMIZER.

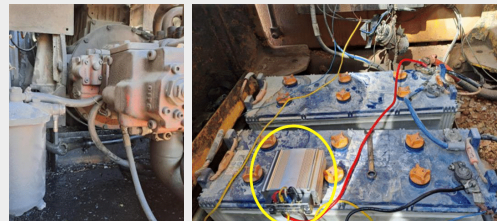
#### Metode Uji Coba HEFO.

01. Unit dan Operator/Driver yang sama.
02. Lokasi kerja dan Shift yang sama.
03. Sebelum Dipasang :
  - Catat data-data yang diperlukan sesuai format dan foto.
  - Tangki unit diisi fuel hingga penuh.
  - Catat Awal: HM/KM/Jam Dunia.....Start.
  - Lakukan pada shift 1 antara jam 7 s/d 12.
  - Catat Akhir: HM/KM/Jam Dunia.....Stop.
  - Unit diisi fuel hingga penuh, catat berapa liter yg terpakai.
04. Saat istirahat HEFO dipasang ke unit.
05. Sesudah Dipasang :
  - Unit yang sdh diisi fuel hingga penuh.
  - Catat Awal : HM/KM/Jam Dunia.....Start.
  - Lakukan pada shift 1 antara jam 13 s/d 17.
  - Catat Akhir: HM/KM/Jam Dunia.....Stop.
  - Unit diisi fuel hingga penuh, catat berapa liter yang terpakai.
06. Bandingkan hasilnya dan hitung berapa % efisiensi yang dicapai.
07. Pengujian dapat dilakukan pada shift 2, lakukan dg cara yg sama.

#### Uji Coba pada 2 Unit Excavator



Jerigen 30 L  
Stop Watch  
Gelas Ukur 2,5 L



Fuel Line dan Pasang HEFO.0500

# HEFO

## HEFO FUEL OPTIMIZER.

### Testimoni HEFO.

Lokasi kerja : Bukit Bunda, Kademangan Blitar

Pekerjaan : Tambang Kapur, CV Aji Jaya Sakti

Pengujian objektif HEFO.0500 oleh FM dan SN

Type	Model	Attch	Tanggal	Data Sebelum				Data Sesudah			
				Jam	Liter	Jam kerja	Ltr/Menit	Jam	Liter	Jam kerja	Ltr/Menit
Excavator Volvo Thn 2010	EC210BLC 156 at 2000	Breaker	13-Jan-24	08.00-09.00	15,0	60	0,25	13.00-14.09	15,0	69	0,22
				09.15-10.15	15,0	60	0,25	14.30-15.41	15,0	71	0,21
				10.30-11.30	15,0	60	0,25				
				<b>jumlah</b>	<b>45</b>	<b>180</b>	<b>0,25</b>	<b>jumlah</b>	<b>30</b>	<b>140</b>	<b>0,21</b>
				<b>Penghematan =</b>	<u>0.25-0.21</u>	<b>14%</b>					
					0.25						
Excavator Komatsu Thn 2009	PC200-7 143 at 1950	Bucket	13-Jan-24	09.00-10.00	15,0	70	0,21	13.00-14.26	15,0	86	0,17
				10.15-11.15	15,0	70	0,21	14.40-16.04	15,0	84	0,18
				<b>jumlah</b>	<b>30</b>	<b>140</b>	<b>0,21</b>	<b>jumlah</b>	<b>30</b>	<b>170</b>	<b>0,18</b>
				<b>Penghematan =</b>	<u>0.21-0.18</u>	<b>18%</b>					
					0.21						

Note : EC210BLC rata-rata operasi 7 jam dengan konsumsi solar 105 liter.  
PC200-7 rata-rata operasi 5 jam dengan konsumsi solar 65 liter, total **170 liter/hari**.

# HEFO

## HEFO FUEL OPTIMIZER.

### Garansi HEFO.

- 01.** Tidak merusak ECM/ECU atau komponen electric lainnya selama tidak dilakukan modifikasi/reverse engineering thd HEFO.
- 02.** HEFO harus dipasang sesuai spesifikasi Horse Power Engine.
- 03.** Garansi 6 bulan dg catatan segel tidak robek atau pecah.
- 04.** Heavy duty, tahan panas, getaran dan percikan air.
- 05.** Masa pakai secara normal optimal 3 tahun atau 15.000 HM.
- 06.** HEFO Product range:
  - HEFO-0500
  - HEFO-1500
  - HEFO-1000
  - HEFO-2000



# GET Solution.

Berbagai macam tipe Tooth Bucket dan aksesoris sesuai unit dengan kualitas yang tinggi.

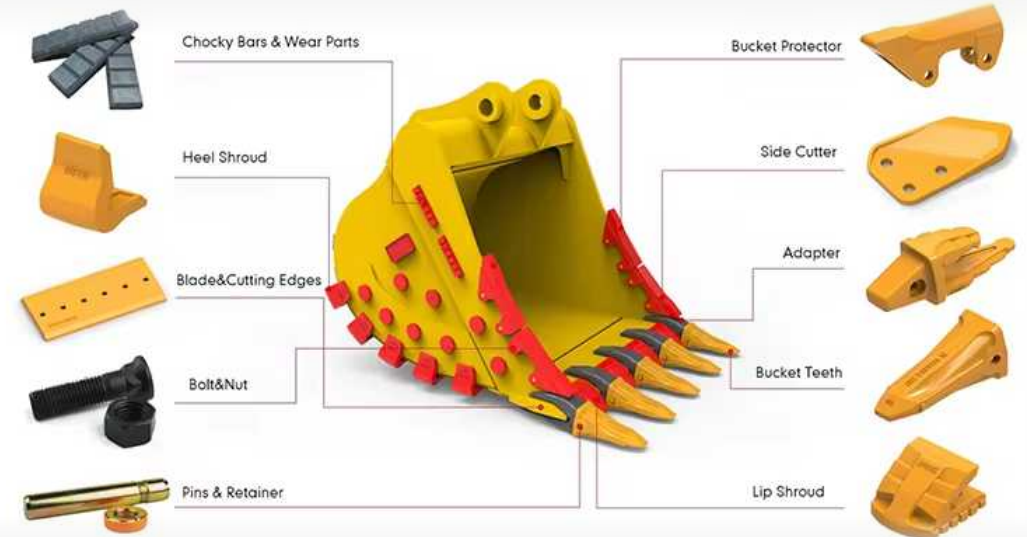


# 01. GET For Bucket.



# GET Solution.

Kami menyediakan berbagai macam type Tooth Bucket dan aksesoris yang sesuai dengan aplikasi unit anda dengan kualitas yang bagus dan harga yang kompetitif.

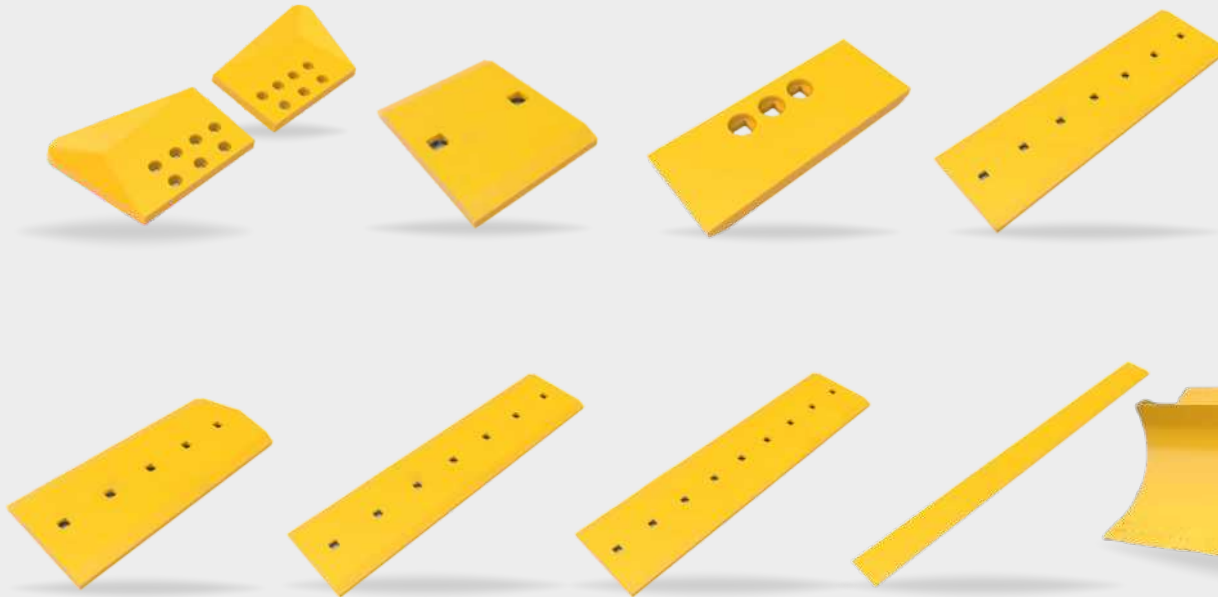




## 02.

### GET For Blade.

Kami menyediakan berbagai macam type Cutting Edge dan End Bit yang sesuai dengan aplikasi unit anda dengan kualitas yang bagus dan harga yang kompetitif.



# GET Solution.



### 03. GET For Ripper.

Kami menyediakan Shank Ripper dan Point Ripper yang siap mendukung operasional anda dengan kualitas yang bagus dan harga yang kompetitif.



#### REINFORCE PLATE

Reinforced the whole structure, prevent the ripper body separate with ear plate.



#### NOSE PROTECTOR

MONDE ripper add a blade to protector ripper to prevent fracture, broken.



#### WEAR RESISTANT PLATE

NM400 material used in this plate to ensure the using life.

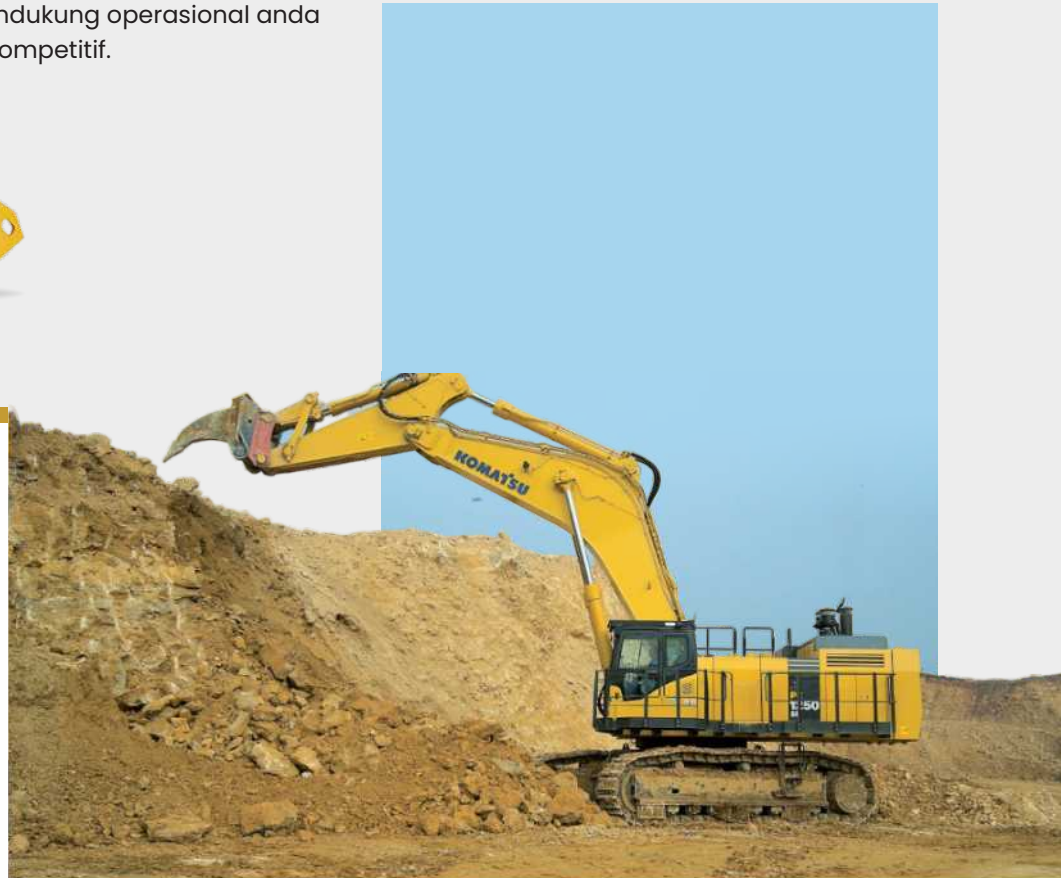


#### HEAVY-DUTY TEETH

Fitted heavy-duty replaceable tooth to ensure the best results and wear resistance.



# GET Solution.



## 04. Tapering Tooth Bucket.

Effisiensi Cost dengan program Tapering Tooth Bucket.

**GET Solution.**



+



=



## 05. Hardening Tooth Bucket.

Memperpanjang life time Tooth dengan program Hardening Tooth Bucket.



**GET Solution.**

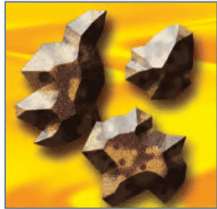
# Oil Solution.

Berbagai macam produk oil purifikasi dan grease untuk menunjang kelancaran kinerja mesin.



# 01. Oil Contamination.

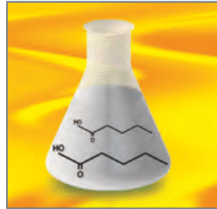
## The most common types of contamination sources.



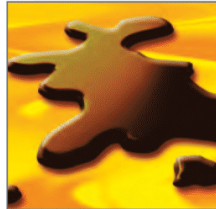
**Removal of Particles**  
 Particles down to 0.8 µm are retained in the filter mass



**Absorption of Water**  
 The cellulose fibres in the filter mass absorb the water



**Removal of Acid**  
 Special inserts neutralise acidic components in the fluid

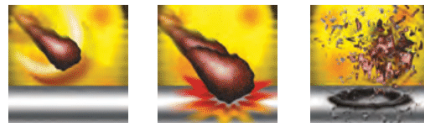


**Adsorption of Oxidation**  
 Sludge/varnish in the oil is attracted to the polar sites of the filter mass and is retained there

## The most common types of contamination sources.

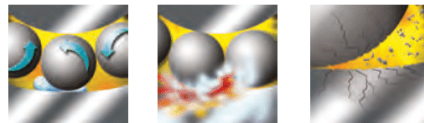
### “Sand blasting”

When particles are transported with the high oil flow, the particles collide with metal parts, destroying the metal surface and forming new particles.



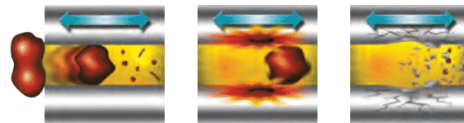
### Cavitation & pitting

Occurs in areas where water is present and oil is compressed; the water implodes, causing the metal surfaces to crackle and release more particles.



### Abrasive wear

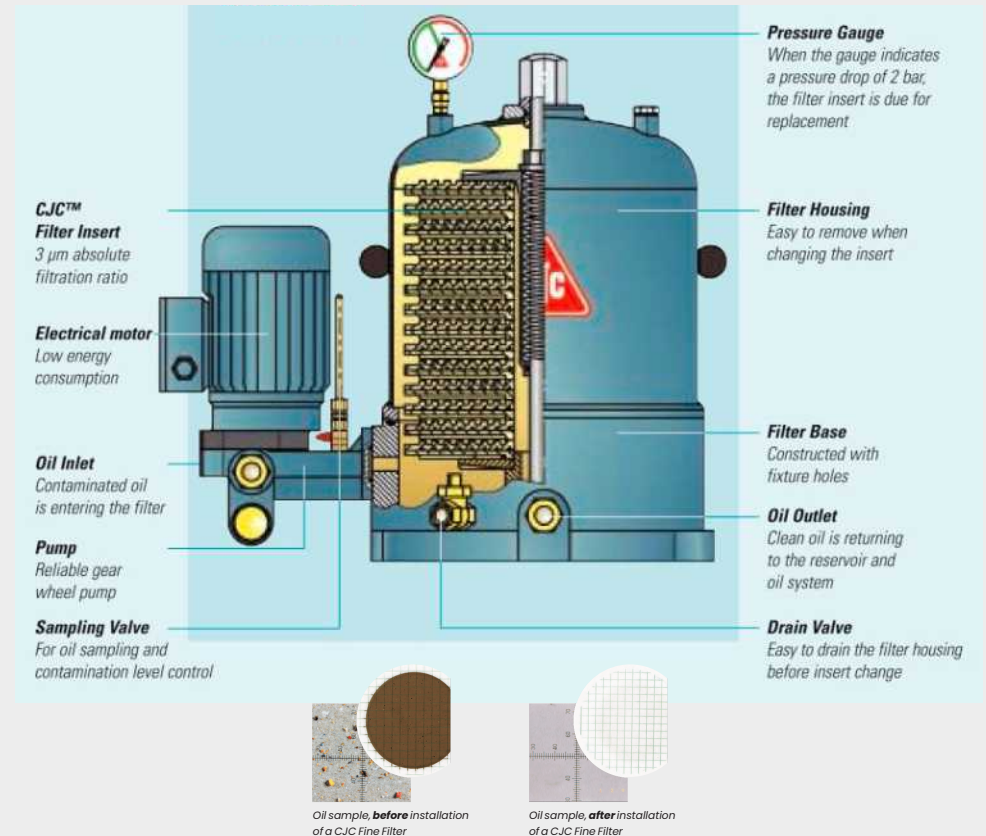
When clearance size particles are wedged between movable metal parts, they destroy the metal surface.



# 02. Oil Solution.

## Oil Purification Machine.

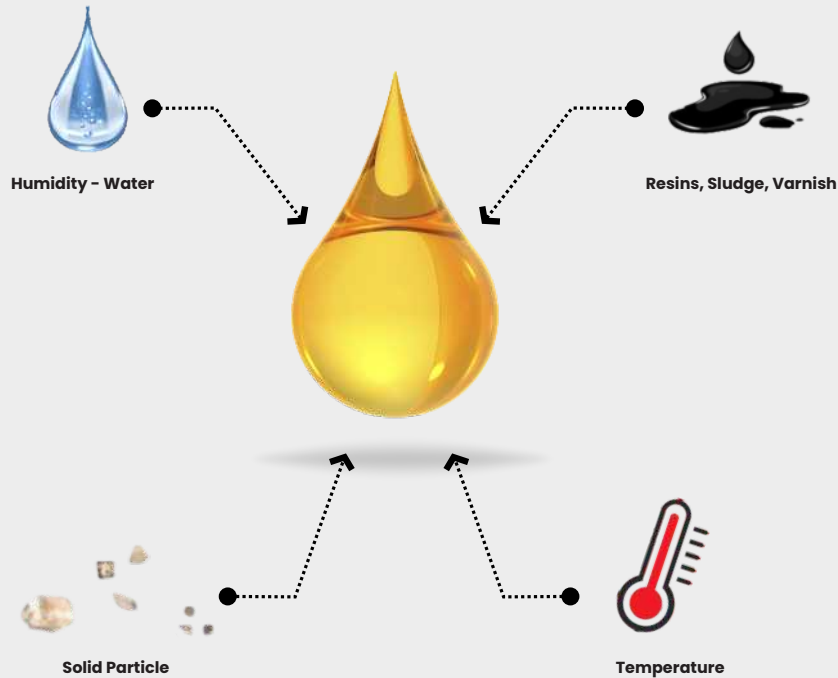
### Main Components



### 03. Contamination Particle.

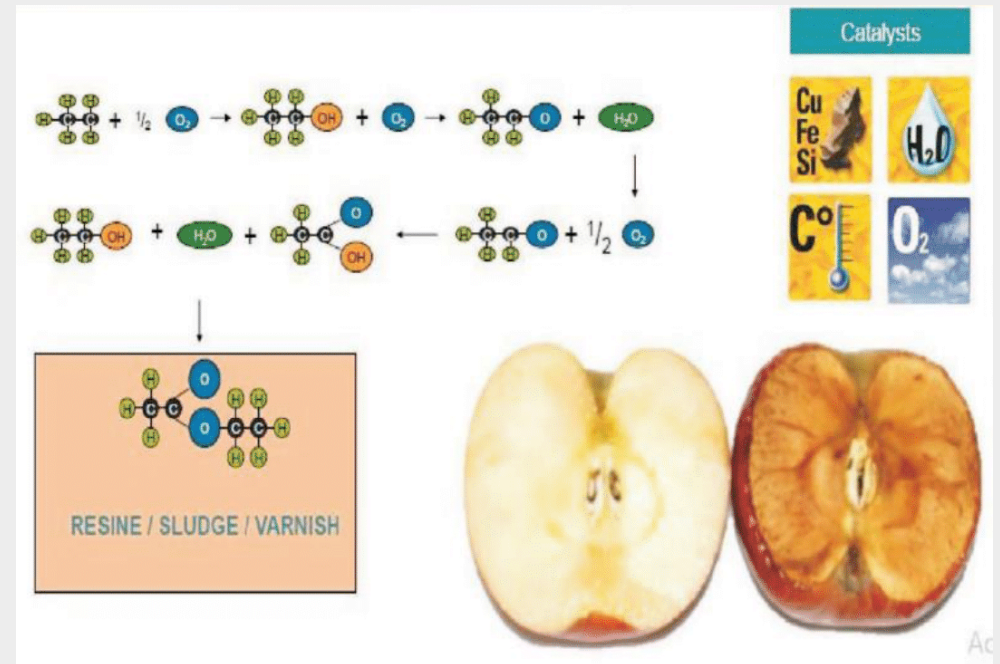
Contaminants, Temperature, Water, Resin, Sludge or Varnish will react with the oil lubricant and these chain reactions will increase the oil degradation.

**Oil Contaminant: Particles, Water, Varnish, etc.**



### 04. Oil Solution. Chain Reactions.

To reduce the oil degradation and prolong the oil lubricant life time, we can offer you the TCM Oil Purification Machine.



## 05. Principle Drawing.

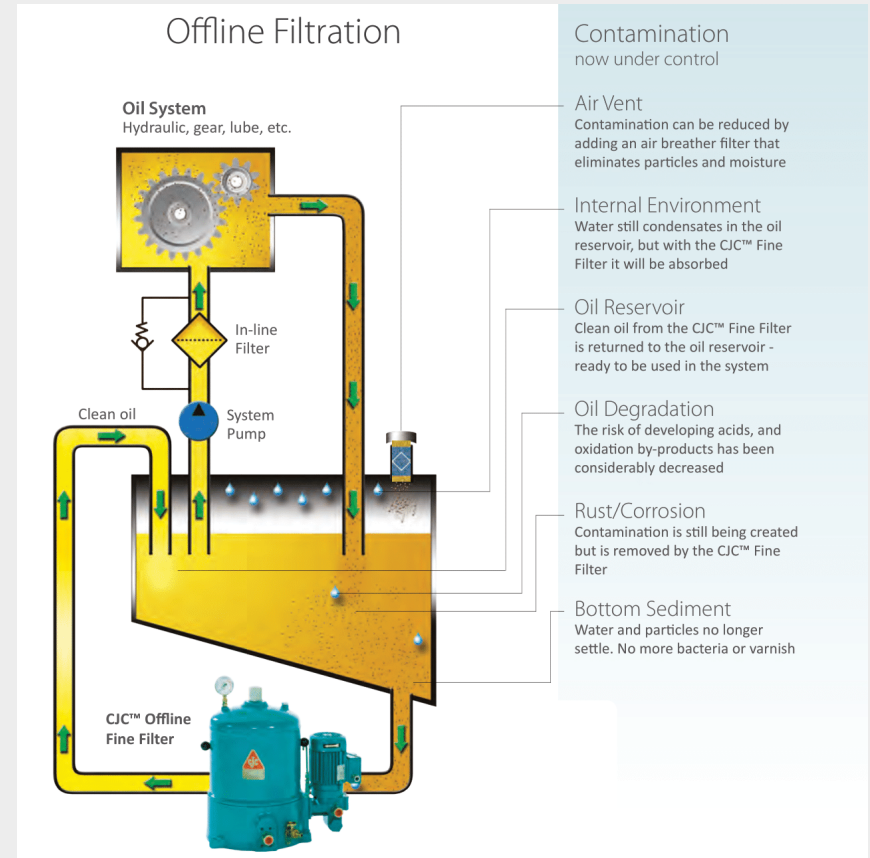
TCM Oil Purification Machine uses special design cellulose filter which has nominal rating 0.8 micron. This filter will absorb and adsorb metal wear, particles, water, sludge, varnish, and acid. We use some parameter to maintain our machine performance steady and well at site, they are :

01. The pressure gage to monitor the filter clogging caused by metal wear/debris, particles or water.
02. Laser Particle Counter to monitor the filter clogging caused by sludge, varnish or acids.

The performance results of our machine can be checked on site through the LASER Particle Counter according to ISO 4406/1999 standard.

# Oil Solution.

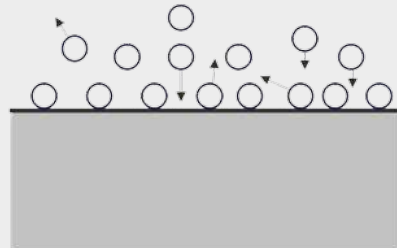
## Principle Drawing of Offline Filtration





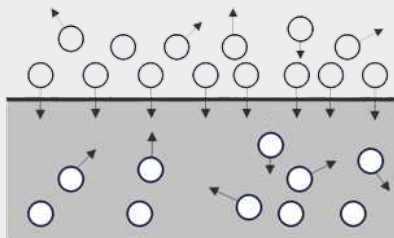
## 06. Filtration Design.

All of the contaminants will be absorbed and adsorbed by our special design cellulose filter. A standard filter only does adsorption process, but TCM Filter does ABSORPTION and ADSORPTION.



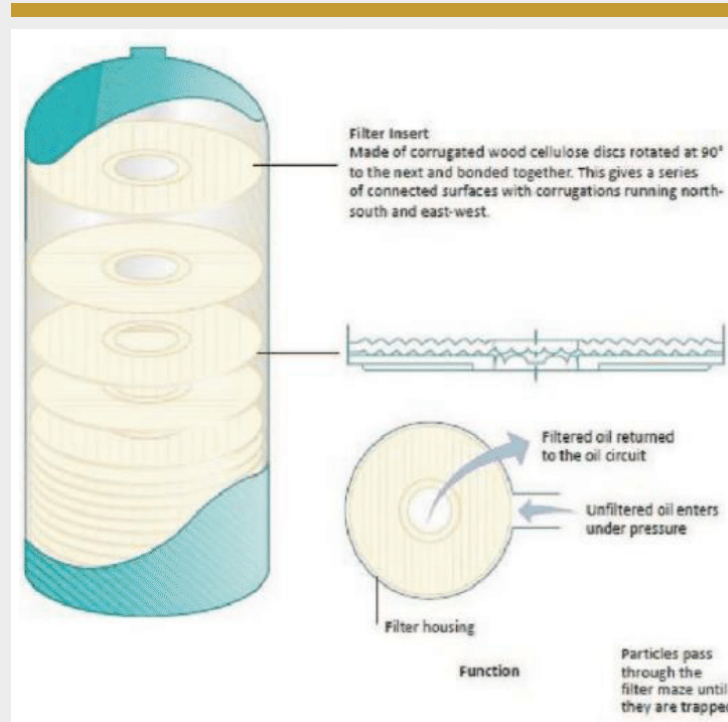
### Adsorption

The adhesion of particles onto a surface of a substance.

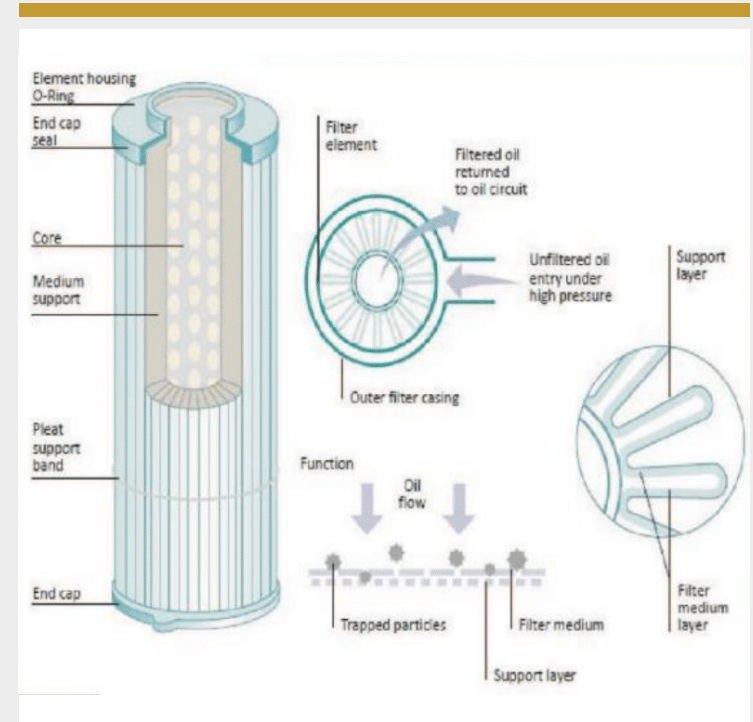


### Absorption

The particles of a substance enter into the volume/bulk of another.



Special Design TCM Filter



Common Standard Filter

# Oil Solution.

## 07. Vickers Code Chart.

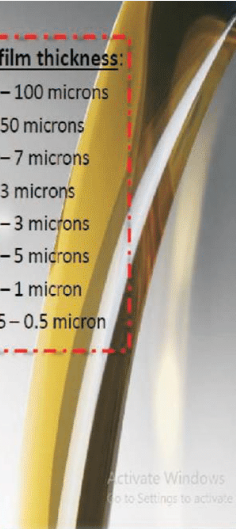
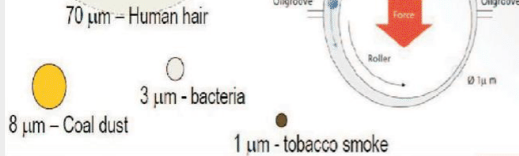
### Vickers Recommended Cleanliness Code

#### Dynamic Oil film vs Particles contamination

- Bushings, journal and sleeve bearings:
- Hydraulic cylinders:
- Engines, ring/cylinder:
- Servo and proportional valves:
- Rolling element bearings / ball bearings:
- Pumps:
- Gears:
- Dynamic seals:

#### Oil film thickness:

- 0.5 – 100 microns
- 5 – 50 microns
- 0.3 – 7 microns
- 1 – 3 microns
- 0.5 – 5 microns
- 0.1 – 1 micron
- 0.05 – 0.5 micron



PUMPS			
Pressure	<140	210	>210 bar
Fixed Gear	20/18/15	19/17/15	
Fixed Vane	20/18/15	19/17/14	18/16/13
Fixed Piston	19/17/15	18/16/14	17/15/13
Variable Vane	18/16/14	17/15/13	
Variable Piston	18/16/14	17/15/13	16/14/12

VALVES		
Pressure	<210	>210 bar
Directional (solenoid)	20/18/15	19/17/14
Pressure Control (modulating)	19/17/14	19/17/14
Flow Controls (standard)	19/17/14	19/17/14
Check Valves	20/18/15	20/18/15
Cartridge Valves	18/16/13	17/15/12
Prefill	20/18/15	19/17/14
CMX	18/16/14	17/15/13
H.R.C.	18/16/13	17/15/12
Proportional Directional (throttle valves)	17/15/12	16/14/11*
Proportional Pressure Controls	17/15/12	16/14/11*
Proportional Flow Controls	17/15/13	17/15/13
Proportional Cartridge Valves	17/15/12	16/14/11*
Servo Valves	16/14/11*	15/13/10*

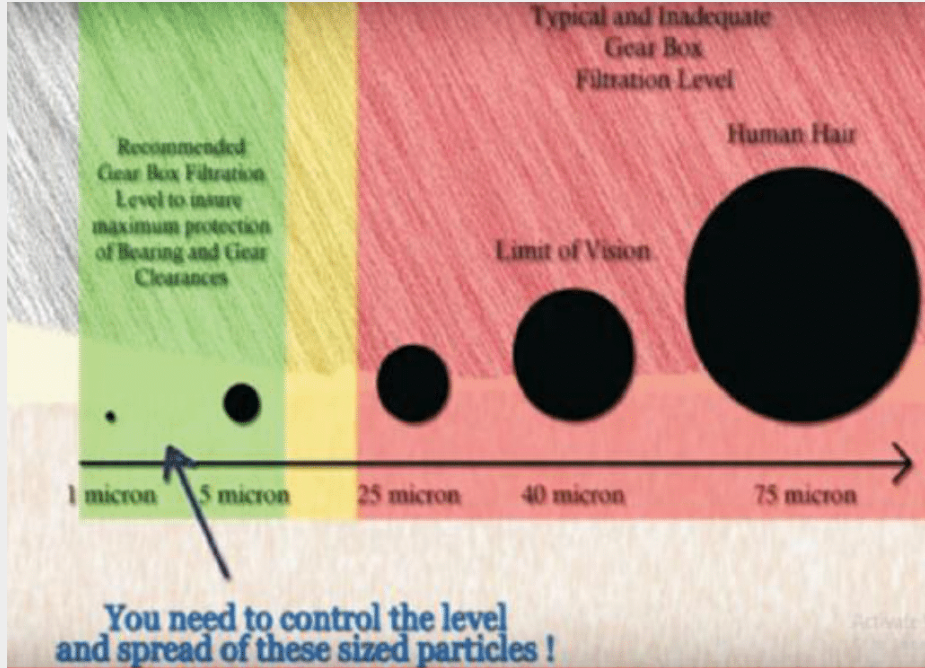
ACTUATORS			
Pressure	<140	210	>210 bar
Cylinders	20/18/15	20/18/15	20/18/15
Vane Motors	20/18/15	19/17/14	18/16/13
Axial Piston Motors	19/17/14	18/16/13	17/15/12
Gear Motors	21/19/17	20/18/15	19/17/14
Radial Piston Motors	20/18/14	19/17/13	18/16/13
Cam Wave Motors	18/16/14	17/15/13	16/14/12*

HYDROSTATIC TRANSMISSIONS			
Pressure	<140	210	>210 bar
Hydrostatic Transmission (in-loop fluid)	17/15/13	16/14/12*	16/14/11*

BEARINGS	
Ball Bearing Systems	15/13/11*
Roller Bearings Systems	16/14/12*
Journal Bearings (high speed)	17/15/13
Journal Bearings (low speed)	18/16/14
General Industrial Gearboxes	17/15/13

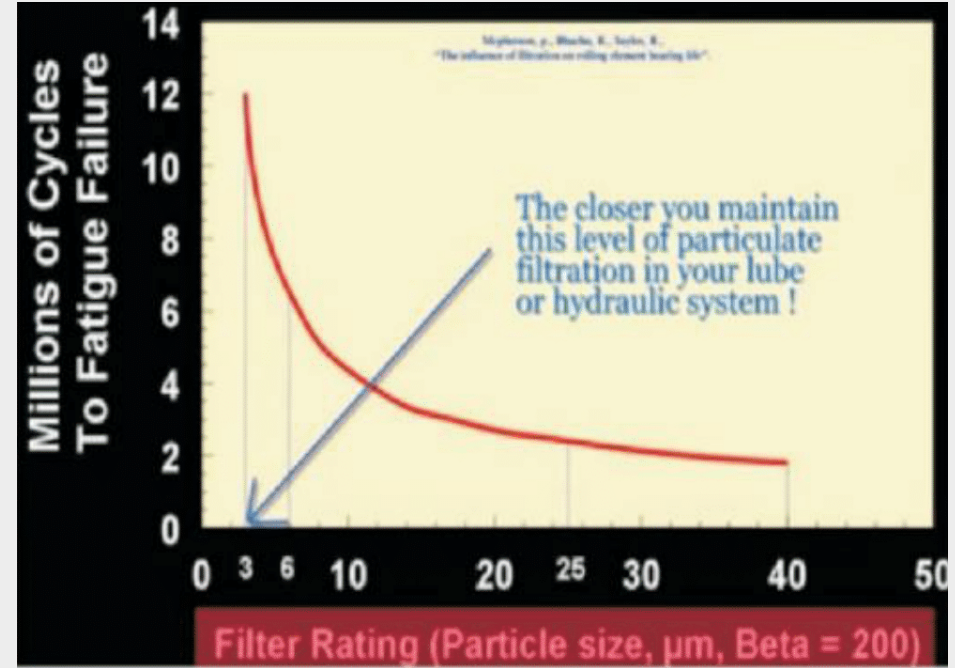
\*) Requires precise sampling practices to verify cleanliness levels.

## 08. Recommended Gearbox Filtration Level.



## 09. Particle Size vs Equipment Lifetime.

# Oil Solution.

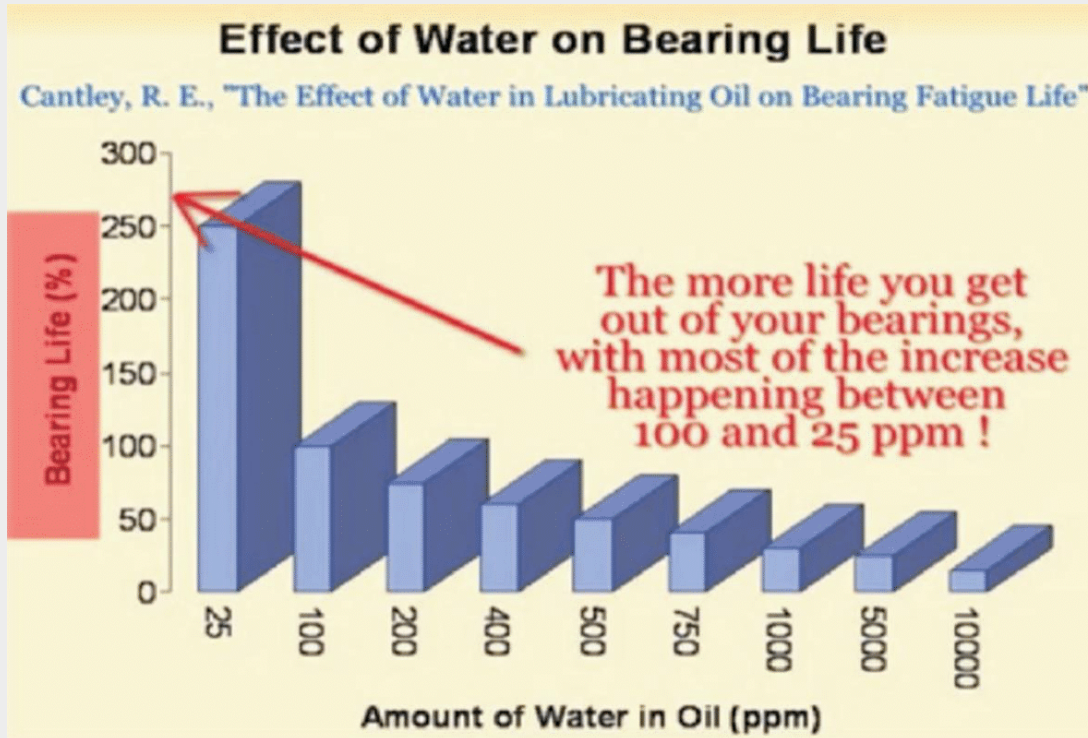


## 10. Life Extension Table.

Current Machine Cleanliness (ISO Code)	21/19/16	20/18/15	19/17/14	18/16/13	17/15/12	16/14/11	15/13/10	14/12/9	13/11/8	12/10/7
24/22/19	2 1.6 1.8 1.3	3 2 2.3 1.7	4 2.5 3 2	6 3 3.5 2.5	7 3.5 4.5 3	8 4 5.5 3.5	>10 5 7 4	>10 6 8 5	>10 7 10 5.5	>10 8 10 8.5
23/21/18	1.5 1.5 1.5 1.3	2 1.7 1.8 1.4	3 2 2.2 1.6	4 2.5 3 2	5 3 3.5 2.5	7 3.5 4.5 3	9 4 5 3.5	>10 5 7 4	>10 7 9 5.5	>10 10 11 8
22/20/17	1.3 1.2 1.2 1.05	1.6 1.5 1.5 1.3	2 1.7 1.8 1.4	3 2 2.3 1.7	4 2.5 3 2	5 3 3.5 2.5	7 4 5 3	9 5 6 4	>10 7 8 5.5	>10 9 11 7
21/19/16		1.3 1.2 1.2 1.1	1.6 1.5 1.5 1.3	2 1.7 1.8 1.5	3 2 2.2 1.7	4 2.5 3 2	5 3 3.5 2.5	7 4 5 3.5	9 6 7 4.5	>10 8 9 6
20/18/15			1.3 1.2 1.2 1.1	1.6 1.5 1.5 1.3	2 1.7 1.8 1.5	3 2 2.3 1.7	4 2.5 3 2	5 3 3.5 2.5	7 4.6 5.5 3.7	>10 6 8 5
19/17/14				1.3 1.2 1.2 1.1	1.6 1.5 1.5 1.3	2 1.7 1.8 1.5	3 2 2.3 1.7	4 2.5 3 2	6 3 4 2.5	8 5 6 3.5
18/16/13	Hydraulics and Diesel Engines	Rolling Element Bearings			1.3 1.2 1.2 1.1	1.6 1.5 1.5 1.3	2 1.7 1.8 1.5	3 2 2.3 1.8	4 3.5 3.7 3	6 4 4.5 3.5
17/15/12			Journal Bearings and Turbo Machinery	Gear Boxes and others			1.3 1.2 1.2 1.1	1.6 1.5 1.5 1.4	2 1.7 1.8 1.5	3 2 2.3 1.8
16/14/11							1.3 1.3 1.3 1.2	1.6 1.6 1.6 1.4	2 1.8 1.9 1.5	3 2 2.3 1.8
15/13/10								1.4 1.2 1.2 1.1	1.8 1.5 1.6 1.3	2.5 1.8 2 1.6

# Oil Solution.

## 11. Water Effect.



1,000ppm = 0,1% LEM - MOISTURE Level Source: Noria Corporation

Current Moisture Level, ppm	2	3	4	5	6	7	8	9	10
50,000	12,500	6,500	4,500	3,125	2,500	2,000	1,500	1,000	782
25,000	6,250	3,250	2,250	1,563	1,250	1,000	750	500	391
10,000	2,500	1,300	900	625	500	400	300	200	156
5,000	1,250	650	450	313	250	200	150	100	78
2,500	625	325	225	156	125	100	75	50	39
1,000	250	130	90	63	50	40	30	20	16
500	125	65	45	31	25	20	15	10	8
260	63	33	23	16	13	10	8	5	4
100	25	13	9	6	5	4	3	2	2

1% water = 10,000 ppm • Estimated life extension for mechanical systems utilizing mineral-based fluids

**Example:** By reducing average fluid moisture levels from 2500 ppm to 156 ppm, machine life (MTBF) is extended by a factor of 5.

It is clear that purifying oil lubricant with TCM Oil Purification Machine will provide you:

01. More clean oil lubricant which will reduce the friction inside your equipment.
02. Extend your equipment by reducing the moisture content inside of your lubricant.
03. By purifying cost is much cheaper than new oil price, you can save your lubricant cost by reusing your lubricant.

## 12. Grease



# Oil Solution.

Selain produk oil purifikasi, kami juga menyediakan grease dengan harga yang kompetitif.

### BALMEROL CHASSIS GREASE



BALMEROL CHASSIS GREASE telah teruji, berbahan dasar kalsium yang diperkuat dengan tackifier untuk kinerja optimal di bawah kondisi jalan yang berat akibat beban kejutan dan getaran. BALMEROL CHASSIS GREASE sangat anti air dan melampaui semua spesifikasi IS: 506 (1993).

### BALMEROL LIPREX EP



BALMEROL LIPREX EP Grease adalah grease berbahan dasar sabun litium generasi pertama yang mengandung aditif extreme pressure (EP) untuk meningkatkan kapasitas bantalan beban. Grease ini diformulasikan dengan minyak dasar parafin berkualitas tinggi dan diperkaya dengan oksidasi, penghambat karat, dan aditif EP.

Memiliki stabilitas geser yang sangat baik dan memiliki toleransi air yang sangat baik dan dapat disesuaikan dengan sistem pengeluaran grease normal termasuk sistem pelumasan terpusat.

## 12. Grease

**Balmerol**  
LUBRICANTS

### BALMEROL LICOM HT RED



BALMEROL LICOM HT RED adalah grease multifungsi suhu tinggi yang diformulasikan dengan sistem sabun lithium kompleks titik jatuh tinggi dan aditif sinergis yang dikembangkan secara khusus untuk pelumasan hingga 170 C pada beban normal hingga berat sehingga mengurangi kebocoran dan meningkatkan umur komponen dengan perpanjangan interval pelumasan ulang.

Grease LICOM HT RED memiliki stabilitas geser yang sangat baik dan daya rekat permukaan yang baik, nonpenuaan, dan sangat tahan terhadap air dingin dan panas, debu, karat, korosi dan oksidasi.

## Oil Solution.

### BALMEROL YELLOW CUP



BALMEROL YELLOW CUP merupakan buttery grease bertekstur halus yang terbuat dari sabun kalsium dari lemak dan asam lemak yang dirancang dengan cermat yang diproses dirumah. Tersedia dalam tekstur lekat dan tidak lekat. BALMEROL YELLOW CUP menunjukkan ketahanan air yang luar biasa, stabilitas geser yang memadai, sifat pencegahan karat yang baik, dan kemampuan pompa yang sangat baik.

# Safety Solution.

Produk-produk alat pelindung diri untuk keselamatan saat kegiatan proyek.





# Safety Solution.

## 01.

### Head and Face Protection.



#### Workgard Safety Helmet

01. HDPE outer shell with rain through for water disbursement.
02. Contoured at both sides to accommodate hearing protection.
03. 30mm accessory slot designed to be compatible with a wide range of face shields and hearing products.
04. 6-point suspension with 2-level height adjustment for a good fit.
05. Easy-to-fit adjustment system of interlocking teeth for firm hold; slide to tighten.
06. Fits a wide range of head sizes up to 62cm (head circumference).
07. Comes with a highly absorbent sweat band.
08. Complies with EN 397:2012 + A1:2012 and SS98:2005.



BRAND	PRODUCT CODE	DESCRIPTION
WORKGard®	WGH100BL	Safety Helmet, Colour: Blue
WORKGard®	WGH100RD	Safety Helmet, Colour: Red
WORKGard®	WGH100WH	Safety Helmet, Colour: White
WORKGard®	WGH100YL	Safety Helmet, Colour: Yellow
WORKGard®	WGH190	Safety Helmet Ratchet Suspension (Spare Part for Replacement)
WORKGard®	WGH150	2-Point Chin Strap
WORKGard®	WGH160	2-Point Chin Strap, with Chin Guard
WORKGard®	WGH170	Helmet Inner Liner

# Safety Solution.

## 02.

### Eye Protection.



#### STRYX E3069

The WORKSafe® Stryx is a plano safety eyewear that blends sporty looks with safety support. Its polycarbonate construction is lightweight yet resistant. Choose from three kinds of swappable lenses to suit your style!

- 01. Dual density injected anti-slip skull-grip temples.
- 02. Adjustable bridge width.
- 03. Complies with ANSI/ISEA Z87.1-2015 and SS473:2011 standards.
- 04. Additional prescription lens inserts available as a top-up.

BRAND	PRODUCT CODE	DESCRIPTION
WORKSafe®	300WSE3069-C1	Satin Black Frame with Grey tips, Clear lens HC
	300WSE3069-C2	Satin Black Frame with Green tips, Clear lens HC
	330WSE3069-L01	Indoor/Outdoor Lens with Nose Bridge
	330WSE3069-L02	Smoke Grey Lens with Nose Bridge
	330WSE3069-L03	Green Revo Lens with Nose Bridge



**Product Code**  
**300WSE3069-C1**

**Product Code**  
**300WSE3069-C2**

## 02. Eye Protection.



### WIDER E3050

The WORKSafe® Wider. Features a side-way 3-stage extendable self-locking tri-flex frontal frame that provides a better fit for both Asian and Western facial profiles.

01. Wraparound frame maximises peripheral vision and protection.
02. Side-way 3-stage extendable self-locking tri-flex frontal frame.
03. Dual density injected anti-slip skull-grip temples.
04. Soft rubber universal-fit nose pads.
05. Complies with EN166:2001 and SS473:2011 standards.

BRAND	PRODUCT CODE	DESCRIPTION
WORKSafe®	300WSE3050601	White/Green frame, Clear lens HC/AF
	300WSE3050311	Grey/Blue frame, Grey lens HC/AF
	300WSE3050320	Grey/Blue frame, Indoor/Outdoor lens HC

# Safety Solution.



**Product Code**  
300WSE3050320



**Product Code**  
300WSE3050320



**Product Code**  
300WSE3050320

## 02.

### Eye Protection.



#### SAFETY GLASSES (PLANO)

##### FIREWING

Tastefully accented with a splash of colour, these futuristic frames offer no-nonsense protection at your workplace. Comfortable and light, you can wear these for hours on end!

- 01. Clear and light translucent frame.
- 02. Durable hard coated lens.
- 03. Integrated TPR nose pad.
- 04. Tested to ANZI/ISEA Z87.1-2015 and SS473:2011 standards.

BRAND	PRODUCT CODE	DESCRIPTION
WORKSafe®	300WGE3064-C1	Translucent clear frame, Clear lens HC

# Safety Solution.



**Product Code**  
**300WGE3064-C1**

### 03. Hand and Arm Protection.



**Product Code**  
500WSWGPU2003

#### WORKSAFE HPPE/PU CUT-RESISTANT GLOVES

This glove features a seamless, cut-resistant High Performance Polyethylene (HPPE) shell with a polyurethane palm coat. The gloves are extremely light and comfortable, and provide superior dexterity as well as excellent cut and abrasion resistance.

- 01. Plant maintenance.
- 02. Packaging.
- 03. Metal sheets & glass handling.
- 04. Automotive industries.

#### MECHANICAL WORK GLOVES



**Product Code**  
510WSWG1412AE

#### WORKSAFE RUBBER PALM-COATED GLOVES

Ergonomic design adds more comfort, enables prolonged usage and avoids hand fatigue. Natural rubber palm with wrinkled finish ensures a secure grip for handling slippery or abrasive objects. Natural rubber inhibits liquid penetration. Available in heavy duty versions.

- 01. Building and construction.
- 02. Shipping and transportation.
- 03. Deep-sea fishing.
- 04. Quarrying.
- 05. Gardening.
- 06. Glass handling.

## Safety Solution.

N196



N186

**Product Code**  
510WSWGN196 - 510WSWGN186

#### WORKSAFE SOLVOTRIL NITRILE GLOVES, JERSEY COTTON (KNIT-WRIST)/(SAFETY CUFF)

A robust NBR supported safety glove with exceptional abrasion, cut and tear resistance. Available with safety cuff wrist protection. Tough yet flexible, these gloves are ideal for manual tasks involving raw materials.

- 01. Metal processing.
- 02. Machine construction.
- 03. Wood work.
- 04. Transport industry.
- 05. Building and construction.

# Safety Solution.

## 03.

### Hand and Arm Protection.



#### WELDING GLOVES



**Product Code**  
**520WSWG112G**

#### WORKSAFE LEATHER WELDING GLOVES

Specially designed for welders to provide high heat resistance and lasting wear. 13" length, fully lined with a one-piece leather back for optimum insulation comfort. Straight thumbs for greater flexibility.

- 01.** Welding and heat applications.
- 02.** Heavy industry.

#### CUT RESISTANT GLOVES (CUT D-F)



**Product Code**  
**510WSWGN550SX**

#### WORKSAFE N550 NITRILE MICROFOAM NYLON GLOVES

These WORKSafe N550 gloves are a great all rounder. Featuring great resistance to common types of force, they remain flexible enough for finer mechanical work.

- 01.** Lightweight and cut-resistant gloves.
- 02.** High abrasion resistance.
- 03.** Provides a firm grip in wet and oily environments.
- 04.** Useful on oil rigs, mechanic workshops and oily environments.



**Product Code**  
**510WSWGN555SX**

#### WORKSAFE N555 NITRILE OIL-PROOF MICROFOAM NYLON LINER

These WORKSafe N555 gloves offer superior E-grade cut protection. Featuring great protection to common types of force, they retain flexibility and comfortable over long shifts.

- 01.** Lightweight and durable.
- 02.** High cut and abrasion resistance.
- 03.** Provides a firm grip in wet and oily environments.
- 04.** Useful on oil rigs, mechanic workshops and other oily environments.

### 03.

## Hand and Arm Protection.



### IMPACT GLOVES



**Product Code**  
**510WSWGN600IMPSX**

#### **WORKSAFE N600IMP MAXIMUM CUT LEVEL F AND IMPACT DEFENCE PROTECTION GLOVES**

Maximum cut and impact defense protection safety gloves with a level F cut resistance, the soft TPR on back keeps hands safe from smash and impact hazards. Featuring a super-strong liner that promises impact defense protection. The sandy finish on the micro-foam nitrile coating gives users a better grip. The reinforcement between thumb and forefinger improves cut resistance and extends usage lifespan. Also, the knit wrist helps prevent dirt and debris from entering the glove.

- 01.** Gas and oil industry.
- 02.** Mining.
- 03.** Construction and building.
- 04.** Handling heavy machines.  
Mechanic use.

# Safety Solution.

### HEAT RESISTANT GLOVES



**Product Code**  
**510WSWGN888**

#### **WORKSAFE N88 HEAT-RESISTANT ENGINEERED NITRILE GLOVES**

Heat-Resistant Safety Gloves Cut Level 1

- 01.** High abrasion resistance.
- 02.** Nitrile latex gloves that offer mild heat protection.
- 03.** For use during work that involves handling heat objects.
- 04.** Compatible with touch screen.
- 05.** Certified with EN388:2016 (4, 1, 2, 1, X) and EN420:2003+A1:2009.
- 06.** Tested with EN407:2020 (X,1,X,X,X,X).

\*Able to withstand 100 Degree Celsius for 15 seconds.

### 03.

## Hand and Arm Protection.



# Safety Solution.

### DISPOSABLE GLOVES



**Product Code**  
**510WSWG37704SX**

#### **WORKSAFE 9-INCH DISPOSABLE NITRILE GLOVES (POWDER FREE)**

Latex-free nitrile gloves offer better puncture and abrasion resistance than latex and vinyl. With 5.5mil thickness, they provide tactile sensitivity and dexterity. They also offer excellent grip in wet and dry conditions.

- 01.** Complies with 21 CFR 177.2600 for food contact.
- 02.** Complies with En374.
- 03.** In accordance with the requirement of the Plastic Material and Articles in Contact with Food Commission Directive 2002/72/EC.
- 04.** Food processing.
- 05.** Laboratory research.
- 06.** Pharmaceutical manufacturing.
- 07.** Housekeeping and janitorial.
- 08.** Assembly of electronics.



**Product Code**  
**510WSWG039SX**

#### **WORKSAFE DISPOSABLE VINYL GLOVES (POWDER FREE)**

An economical material that offers excellent sensitivity and dexterity while minimising contamination. It's a perfect alternative for workers with latex allergies.

- 01.** Food processing.
- 02.** Housekeeping and janitorial.
- 03.** Laboratory research.
- 04.** Pharmaceutical manufacturing.
- 05.** Assembly of electronics.



## 04. Protective Apparel.

**WORKSafe®**  
PEOPLE PROTECTION



### FLAME-RESISTANT COVERALLS

01. FR two-way brass zipper.
02. Two large double-stitched cargo pockets on both legs with flap-on hidden fasteners.
03. Two radio loops above chest pockets.
04. One pen-pocket with flap-on hidden fasteners.
05. Double-stitched seams for enhanced durability.
06. Elastic waist.
07. FR reflective strips, logo and name tags are optional.

Size (X): S / M / L / XL / 2XL / 3XL / 4XL / MTM

BRAND	PRODUCT CODE		DESCRIPTION
WORKSafe®	620WSCNMXA450RCSX	Orange	Nomex® Soft, 4.5oz, Orange
	620WSCNMXA45RBCSX	Royal Blue	Nomex® Soft, 4.5oz, Royal Blue
	620WSCNMXA45NBCSX	Navy Blue	Nomex® Soft, 4.5oz, Navy Blue
	620WSCNMXA45RDCSX	Red	Nomex® Soft, 4.5oz, Red
	620WSCNMXA45GYCSX	Grey	Nomex® Soft, 4.5oz, Grey
WORKSafe®	620WSCNMXA55YLCSX	Yellow	Nomex® Soft, 5.3oz, Yellow
WORKSafe®	620WSPYR700RCSX	Orange	Pyrovatex® Orange

# Safety Solution.



## 04. Protective Apparel.



# Safety Solution.

### FLAME-RESISTANT APPAREL



#### FLAME-RESISTANT JACKET

01. Two large double-stitched chest pockets with flap-on fasteners.
02. Two radio loops above chest pockets.
03. One pen-pocket with flap-on hidden fasteners.
04. Double-stitched seams for enhanced durability.
05. FR reflective strips, logo and name tags are optional.

Size (X): S / M / L / XL / 2XL / 3XL / 4XL / MTM

BRAND	PRODUCT CODE	DESCRIPTION
WORKSafe®	620WSCNMXA450RJSX	Nomex® Soft, 4.5oz, Orange
	620WSCNMXA45RBJSX	Nomex® Soft, 4.5oz, Royal Blue
	620WSCNMXA45NBJSX	Nomex® Soft, 4.5oz, Navy Blue
	620WSCNMXA45RDJSX	Nomex® Soft, 4.5oz, Red
	620WSCNMXA45GYJSX	Nomex® Soft, 4.5oz, Grey
WORKSafe®	620WSCPYP700RJSX	Pyrovatex® Orange



#### FLAME-RESISTANT PANTS

01. Two slack-style front pockets.
02. Two set-in hip pockets.
03. FR brass zippers.
04. 2 cargo-style pockets at both legs.
05. Double-stitched seams for enhanced durability.
06. FR reflective strips, logo and nametags are optional.

Size (X): S / M / L / XL / 2XL / 3XL / 4XL / MTM

BRAND	PRODUCT CODE	DESCRIPTION
WORKSafe®	620WSCNMXA450RPSX	Nomex® Soft, 4.5oz, Orange
	620WSCNMXA45RBPSX	Nomex® Soft, 4.5oz, Royal Blue
	620WSCNMXA45NBPSX	Nomex® Soft, 4.5oz, Navy Blue
	620WSCNMXA45RDPSX	Nomex® Soft, 4.5oz, Red
	620WSCNMXA45GYPSX	Nomex® Soft, 4.5oz, Grey
WORKSafe®	620WSCPYP700RPSX	Pyrovatex® Orange

## 04. Protective Apparel.



# Safety Solution.

### SAFETY VEST



#### WORKGARD SAFETY VEST

01. One size fits all.
02. Lightweight and flexible.
03. High visibility fluorescent colour.
04. Reflective strips located on the front and back.
05. 100% polyester mesh fabric.
06. Machine washable: cold cycle.

Size (X): S / M / L / XL / 2XL / 3XL / 4XL / MTM

PRODUCT CODE	DESCRIPTION
610WGCSV100GN	WORKGard® Safety Vest, Lime Green With Reflective Strip. Size: Free
610WGCSV100OR	WORKGard® Safety Vest, Orange With Reflective Strip. Size: Free
610WGCSV200YLSX	WORKGard® Safety Vest, Yellow With Reflective Strip, Zipper, Pockets. Size (X): S/M/L/XL



#### WORKGARD ELASTIC REFLECTIVE VEST

01. Elastic webbing vest.
02. One size fits all.
03. Lightweight and flexible.
04. High visibility fluorescent colour.
05. Reflective strips throughout vest.
06. Machine washable: cold cycle.

Size (X): S / M / L / XL / 2XL / 3XL / 4XL / MTM

PRODUCT CODE	DESCRIPTION
610WGCSV110GN	WORKGard® Elastic Reflective Vest, Lime Green. Size: Free
610WGCSV110OR	WORKGard® Elastic Reflective Vest, Orange. Size: Free
WORKSafe®	620WSCNMXA45NBPSX <small>Nomex® Soft, 4.5oz, Navy Blue</small>
	620WSCNMXA45RDPSX <small>Nomex® Soft, 4.5oz, Red</small>
	620WSCNMXA45GYPSX <small>Nomex® Soft, 4.5oz, Grey</small>
WORKSafe®	620WSCPYP700RPSX <small>Pyrovatex® Orange</small>

# 05. Safety Shoes.



# Safety Solution.

## STEEL TOECAP



- Steel toecap.
- Oil-resistant.
- Anti-static.
- Penetration-resistant.

### WORKGARD OMEGA & ALPHA SERIES



BRAND	TYPE	PRODUCT CODE	DESCRIPTION	STANDARD
WORKGard®	Omega-L	WGS8010	Low Cut, Brown Suede Leather. Size (X): 36-47	EN ISO 20345 (SIP SRC), SS513
WORKGard®	Omega-M	WGS8011	Mid Cut, Brown Suede Leather. Size (X): 37-47	EN ISO 20345 (SIP SRC), SS513
WORKGard®	Alpha-L	WGS8007	Low Cut, Black Barton Split Leather. Size (X): 36-47	EN ISO 20345 (SIP SRC), SS513
WORKGard®	Alpha-M	WGS8008	Mid Cut, Black Barton Split Leather. Size (X): 37-47	EN ISO 20345 (SIP SRC), SS513

### WORKSAFE VULCAN BOOTS



BRAND	TYPE	PRODUCT CODE	DESCRIPTION	STANDARD
WORKSafe®	Vulcan Boots	WSS10BBA	Black Vulcan Boots With Steel Toe Cap and Midsole Size (X): 4-12	EN ISO 20345 (SS SRA)
WORKSafe®	Vulcan Boots	WSS10BYN	Yellow Vulcan Boots With Steel Toe Cap and Midsole Size (X): 4-12	EN ISO 20345 (SS SRA)

### Size Chart

Length (mm)	236	248	254	261	267	273	281	287	293
UK	4	5	6	7	8	9	10	11	12
US	5	6	7	8	9	10	11	12	13
EU	38	39	40	41	42	43	44	45	46

# Safety Solution.

## 06.

### Fall Safety.



#### 4 CATEGORIES OF FALL PROTECTION



#### WORKSAFE WSAZ900 WEBBING SLING

01. Anchoring sling suitable for almost all types of structures.
02. Made of 20mm-width polyamide webbing.
03. Static strength: 22kN.
04. Comes in standard lengths of 0.6m, 1.2m or 2m; other lengths available on request, up to a maximum of 2m.
05. Tested and approved to EN354 and EN795 Type B standards.

PRODUCT CODE	DESCRIPTION
710WSFAZ900060	Webbing Sling, Red, Length: 0.6m
710WSFAZ900120	Webbing Sling, Red, Length: 1.2m
710WSFAZ900200	Webbing Sling, Red, Length: 2m



#### WORKSAFE WSAZ410 STEEL CABLE CONNECTING LANYARD

01. Suitable for structures with sharp edges.
02. Static strength: 15kN.
03. Tested and approved to EN795 Type B standards.
04. Karabiner sold separately.

PRODUCT CODE	DESCRIPTION
710WSFAZ410-1	AZ410 Steel Cable Connecting Lanyard, Length: 1m



#### WORKSAFE WSFAT250 ALUMINIUM ANCHOR CLAMP

01. Lightweight (1.37kg) aluminium I-beam anchor clamp. Adjustable, fits I-beams of width 95mm to 400mm.
02. Dimensions: 440 x 100 x 45mm.
03. Designed for 1 worker.
04. Tested and approved to EN795 Type B standards.

PRODUCT CODE	DESCRIPTION
710WSFAT250	AT250 Aluminium Anchor Clamp for 1 worker only



#### WORKSAFE WSAZ410 STEEL CABLE CONNECTING LANYARD

01. Temporary horizontal adjustable webbing lifeline that comes with a ratchet tensioner and snap hook on each end for quick and easy installation.
02. Webbing length: 10m or 20m.
03. Webbing width: 35mm.
04. Has connecting webbing sewn to bag to stow excess webbing.
05. Allows up to 3 workers at the same time.
06. Tested and approved to EN795 Type B standards.

PRODUCT CODE	DESCRIPTION
710WSFAE320-10-50-60	Horizontal Adjustable Webbing, 10m, Red Sling Bag, 2 Snap Hooks
710WSFAE320-20-50-60	Horizontal Adjustable Webbing, 20m, Red Sling Bag, 2 Snap Hooks

# Safety Solution.

## 06.

### Fall Safety.



#### PREMIUM HARNESES



**WORKSAFE WSFAB190-01 FULL BODY HARNESS WITH FRONT, DORSAL ANCHORAGE POINTS, AND WORK POSITIONING BELT**

- 01. Designed for person weighing up to 140kg.
- 02. Harness with front and dorsal anchorage points, attachment point for sitting position, side attachment point for work positioning and an additional back attachment point.
- 03. Separate adjustment for leg and shoulder straps.
- 04. Comes with shoulder padding and accessory attachment on the work positioning belt.
- 05. Tested and approved to EN358, EN361 and EN813 standards.

PRODUCT CODE	DESCRIPTION
710WSFAB19001XXL	Full Body Harness with Front, Dorsal Anchorage Points, Work Positioning Belt. Size: XXL



**WORKSAFE WSFAB170-01 FULL BODY HARNESS WITH FRONT, DORSAL ANCHORAGE POINTS, AND WORK POSITIONING BELT**

- 01. Harness with front and dorsal anchorage points and work positioning belt.
- 02. Separate adjustment for leg and shoulder straps.
- 03. Tested and approved to EN361, EN358 and EN813 standards.

PRODUCT CODE	DESCRIPTION
710WSFAB150-01	Full Body Harness with Front, Dorsal Anchorage Points, Work Positioning Belt, 2 Side D-Rings



**WORKSAFE WSFAB150-01 FULL BODY HARNESS WITH FRONT, DORSAL ANCHORAGE POINTS, AND WORK POSITIONING BELT**

- 01. Harness with front and dorsal anchorage points and work positioning belt.
- 02. Separate adjustment for leg and shoulder straps.
- 03. Tested and approved to EN361 and EN358 standards.

PRODUCT CODE	DESCRIPTION
710WSFAB170-01	Full Body Harness with Front, Dorsal Anchorage Points, Work Positioning Belt, 2 Side D-Rings

## 06.

### Fall Safety.



# Safety Solution.

## SELF-RETRACTING LIFELINE



### WORKSAFE CR250V SELF-RETRACTING LIFELINE

01. Self-locking device for vertical and horizontal operation.
02. Available in 6m, 10m, 12m, and 15m.
03. Composite Housing Galvanised Steel/Stainless.
04. Dimension: 270 x 260 x 90 mm.
05. Weight: 10m length - 4.20kg/15m length - 4.90kg.
06. Tested and approved to EN 360:2002 standards.

PRODUCT CODE	DESCRIPTION
710WSFCR250V-10-2	Self-retracting Lifeline, Galvanised Steel Cable (10M) / (15M) with Fall Indicator Snap Hook
710WSFCR250V-15-2	



### WORKSAFE WSFCR250HV SELF-LOCKING DEVICE FOR VERTICAL AND HORIZONTAL

01. Self-locking device for vertical and horizontal operation.
02. Available in 6m, 8m, and 11m.
03. Composite Housing Galvanised Steel/Stainless.
04. Dimension: 270 x 260 x 90 mm.
05. Weight: 11m length - 5.50kg.
06. Tested and approved to EN 360 standards.

PRODUCT CODE	DESCRIPTION
710WSFCR250HV-11-2	Self-locking Device for Vertical and Horizontal Operation, Galvanised Steel Cable (11m)



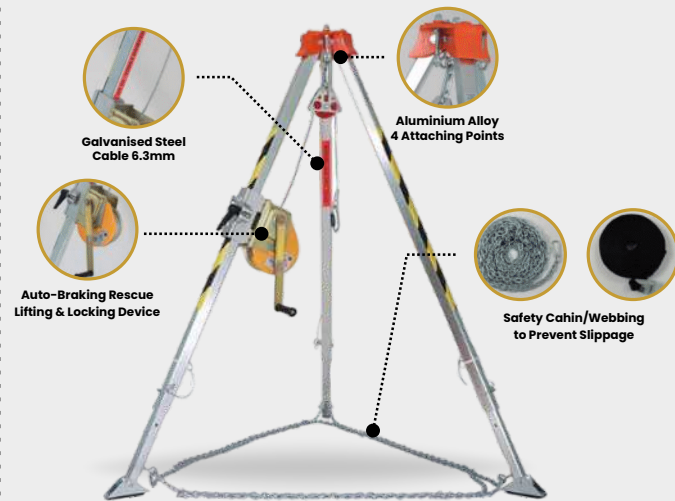
### WORKSAFE FCR300 STEEL CABLE RETRACTOR

01. Zinc galvanised steel cable of diameter 4mm.
02. Stainless steel ring.
03. High Density Thermoplastic Enclosure.
04. Dimensions: 260 x 120 x 340mm.
05. Available in 20m (11.25kg) and 28m (11.65kg).
06. Includes galvanised steel swivel aluminium snap hook and fall indicator (opening: 23mm, weight: 200g).
07. Tested and approved to EN360 standards.

PRODUCT CODE	DESCRIPTION
710WSFCR300-20/28	CR300 Steel Cable Retractor, Swivel Snap Hook, Fall Indicator, Cable Length: 20m/28m

## 06.

### Fall Safety.



## TRIPOD & RESCUE WINCH



### WORKSAFE WSFAT011 SAFETY TRIPOD

01. Working load limit: 500kg and breaking force: 22kN.
02. Zinc-plated, painted steel head with four anchor points.
03. Aluminium adjustable legs, come with webbing and chain to prevent legs spreading and collapsing.
04. Weight: 14.3kg with webbing, 17.3kg with chain.
05. Tested and approved to EN795 Type B standards.
06. Height: 147 to 229cm.
07. Diameter: 119 to 182cm.

PRODUCT CODE	DESCRIPTION
710WSFAT050-20/25	RUP 502 Rescue Lifting Device AT050, Galvanised Steel Cable Dia: 6.3mm, Cable Length: 20m/25m

# Safety Solution.



### WORKSAFE WSFAT050 RESCUE LIFTING DEVICE

01. Rescue lifting and lowering device.
02. Automatic brake.
03. Steel galvanised cable of diameter 6.3mm.
04. Available in 20m and 25m length.
05. Weight: 13kg.
06. Working load: 180kg and breaking force: 1,800kg.
07. Tested and approved to EN1496 Class B standards.

PRODUCT CODE	DESCRIPTION
710WSFAT011	AT011 Safety Tripod with Webbing and Chain



## 07.

### Fire Extinguisher.



#### The Most Environmental Friendly Clean Agent

FE-36 (Hydrofloutocarbon-23fa, atau HFC-236fa) merupakan standar pengganti Halon 1211 yang mempunyai performa dan efisiensi sebanding dengan Halon 1211, dan juga merupakan pengganti Halon 1301 pada aplikasi lokal seperti pada Sistem Modul (Fire System)

Media ini sangat ramah lingkungan, aman bagi manusia, aset, dan merupakan pilihan tepat untuk lingkungan berdasarkan US EPA (United States Environmental Protection Agency) dan NFPA (National Fire Protection Association) dengan sifatnya yang non konduktif, non korosif, dan bebas residu FE-36 mempunyai tingkat perusak Ozon yang nihil.



# Safety Solution.



## 07. Fire Extinguisher.



D 1430 FE-36

D 990 FE-36

D 840 FE-36

D 240 FE-36

FE-36 diciptakan untuk mencegah dan memadamkan kebakaran kelas A, B, dan C dengan situasi dimana media pemadam api biasanya seperti air, kimia kering, dan karbon dioksida tidak dapat digunakan karena menimbang resiko kerusakan yang dapat mengganggu produktifitas usaha atau dapat menimbulkan resiko keamanan.

# Safety Solution.

MODEL	D 240 FE-36	D 840 FE-36	D 990 FE-36	D 1430 FE-36
Media	CLEAN AGENT FE - 36			
Type	STORED PRESSURE N2 (NITROGEN)			
Kapasitas	2.4 lbs	8.4 lbs	9.9 lbs	14.3 lbs
Kelas Kebakaran	A , B , C			
Tabung Silinder	TANPA LAS			
Jarak Semprot (meter)	3 s/d 6	4 s/d 8	4 s/d 8	4 s/d 8
Waktu Semprot (detik)	8	10	11	13
Tinggi (mm)	300	460	455	535
Lebar (mm)	130	280	285	310
Diameter Tabung (mm)	90	130	160	160
Temperature (°C)	-20 s/d 60			
Tekanan Dalam Tabung	7 bar			
Berat Total (kg)	2.2	6.3	7.4	10
Fire Rating	1A	1A	2A	3A, 12B
Labeling	SCREEN PRINTING			
Finishing	COLOR:RED, UV RESISTANCE POWDER COATING			

## 07.

## Fire Extinguisher.



D 10000 FE-36



D 5000 FE-36

FE-36 dirancang khusus untuk melindungi aset-aset berharga seperti: Ruang Kontrol, Ruang Komputer, Fasilitas Telekomunikasi, Museum, Arsip Berharga, Rumah Sakit, Bank, Laboratorium, dan Industri Penerbangan.

# Safety Solution.

MODEL	D 5000 FE-36	D 10000 FE-36
Media	CLEAN AGENT FE - 36	
Type	STORED PRESSURE N2 (NITROGEN)	
Kapasitas	50 lbs	100 lbs
Kelas Kebakaran	A , B , C	
Tabung Silinder	DENGAN LAS	
Jarak Semprot (meter)	6 s/d 12	6 s/d 12
Waktu Semprot (detik)	28	40
Tinggi (mm)	1050	1205
Lebar (mm)	570	570
Diameter Tabung (mm)	368	368
Temperature (°C)	-20 s/d 60	
Tekanan Dalam Tabung	7 bar	
Berat Total (kg)	70	100
Fire Rating		
Labeling	STICKER	
Finishing	COLOR:RED, UV RESISTANCE POWDER COATING	

## 07. Fire Extinguisher.



### Dry Chemical Powder

# Safety Solution.



Produk terbaik dari kami, pemadam serbaguna mencakup berbagai macam kelas api, dengan kandungan 90% Monoammonium Phosphate untuk performa tak tertandingi. Pilihan terbaik bagi anda untuk mengatasi resiko kebakaran.

## 07. Fire Extinguisher.



P 1200 ABC 90    P 900 ABC 90    P 600 ABC 90    P 450ABC 90    P 300 ABC 90    P 200 ABC 90    P 100 ABC 90

Pemadam Api SERVVO dengan media Dry Chemical Powder ABC (Multi Purpose) memiliki kandungan Monoammonium Phosphate 90% UL Approved Part No. 711 (ABC 90% UL) menghasilkan kemampuan terbaik dalam memadamkan api dibanding formulasi yang digunakan pemadam api merek lain.

# Safety Solution.

MODEL	P 100 ABC 90	P 200 ABC 90	P 300 ABC 90	P 450 ABC 90	P 600 ABC 90	P 900 ABC 90	P 1200 ABC 90
Media	DRY CHEMICAL POWDER PC ABC 90% (UL)						
Type	STORED PRESSURE N2 (NITROGEN)						
Kapasitas	1 kg	2 kg	3 kg	4.5 kg	6 kg	9 kg	12 kg
Kelas Kebakaran	A , B , C						
Tabung Silinder	TANPA LAS						
Jarak Semprot (meter)	2 s/d 7	2 s/d 8	2 s/d 9	3 s/d 11	3 s/d 12	4 s/d 12	4 s/d 12
Waktu Semprot (detik)	9	10	11	13	16	20	25
Tinggi (mm)	300	374	460	455	540	575	665
Lebar (mm)	130	145	280	285	310	320	340
Diameter Tabung (mm)	90	130	130	160	160	190	190
Temperature (°C)	-20 s/d 60						
Tekanan Dalam Tabung	15 bar						
Berat Total (kg)	2.1	3.9	5.5	7.4	9.4	13.2	16.6
Fire Rating	2A.10B	3A.20B	4A.30B	6A.40B	7A.60B	12A.80B	12A.80B
Labeling	SCREEN PRINTING						
Finishing	COLOR:RED, UV RESISTANCE POWDER COATING						

## 07. Fire Extinguisher.



P 6800 ABC 90

P 5000 ABC 90

P 2500 ABC 90

Sangat efektif untuk memadamkan semua resiko kebakaran kelas A, B, dan C yang diakibatkan oleh benda padat rentan terbakar, cairan mudah terbakar dan kelistrikan. Pemadam Api SERVVO diproduksi berdasarkan Standar Nasional Indonesia (SNI) & Internasional NFPA dengan pengawasan yang ketat oleh Sistem Manajemen Mutu ISO 90012008.

# Safety Solution.

MODEL	P 2500 ABC 90	P 5000 ABC 90	P 6800 ABC 90
Media	DRY CHEMICAL POWDER PC ABC 90% (UL)		
Type	STORED PRESSURE N2 (NITROGEN)		
Kapasitas	25 kg	50 kg	68 kg
Kelas Kebakaran	A , B , C		
Tabung Silinder	DENGAN LAS		
Jarak Semprot (meter)	4 s/d 14	4 s/d 14	4 s/d 14
Waktu Semprot (detik)	30	50	60
Tinggi (mm)	1050	1205	1205
Lebar (mm)	570	570	570
Diameter Tabung (mm)	370	370	370
Temperature (°C)	-20 s/d 60		
Tekanan Dalam Tabung	15 bar		
Berat Total (kg)	72	102	120
Fire Rating	20A.80B	30A.125B	30A.125B
Labeling	STICKER		
Finishing	COLOR:RED, UV RESISTANCE POWDER COATING		

## 07. Fire Extinguisher.



# Safety Solution.

### Ve-Ex (Vehicle Extinguisher)



Dirancang secara khusus untuk memberikan perlindungan optimal pada Alat Transportasi Darat seperti Mobil Penumpang, Sedan, MVP, SUV, Pick Up, Bus, Truck, dll. Dilengkapi dengan bracket yang dirancang khusus untuk keamanan dan kenyamanan berkendara SERVVO Ve-Ex telah digunakan oleh industri otomotif terkemuka baik untuk pangsa pasar export maupun domestik.

MODEL	P 100 SA
Media	DRY CHEMICAL POWDER PC ABC 90% (UL)
Type	STORED PRESSURE N2 (NITROGEN)
Kapasitas	1 kg
Kelas Kebakaran	A , B , C
Tabung Silinder	TANPA LAS
Jarak Semprot (meter)	2 s/d 7
Waktu Semprot (detik)	9
Tinggi (mm)	299
Lebar (mm)	117
Diameter Tabung (mm)	90
Temperature (°C)	20 s/d 60
Tekanan Dalam Tabung	15 bar
Berat Total (kg)	2
Fire Rating	2A.10B
Labeling	SCREEN PRINTING
Finishing	COLOR:RED, UV RESISTANCE POWDER COATING

# Safety Solution.

## 07. Fire Extinguisher.



### Sertifikasi



KEMENTERIAN LINGKUNGAN HIDUP  
REPUBLIK INDONESIA





# Tyre Solution.

Berbagai macam jenis tyre serta jasa repair tyre & tyre second.





## Tyre Solution.

Moda transportasi maupun unit alat berat di wilayah operasional yang beragam menuntut perhitungan yang tepat dalam memilih ban dan komponen pendukungnya. Ketahanan terhadap kondisi kerja yang penuh tuntutan menggambarkan keamanan dan produktifitas unit dan hal besar yang dipengaruhi oleh sistem pendukung pergerakan. Pemilihan tyre yang tepat sesuai dengan kondisi jalan mampu memberikan performa cost perkilometer yang efisien.



## CB761

Loader / Earthmover / Grader

- Classical design with high resistance to impacts and cuts
- Longer tread life due to the deeper tread depth
- New sidewall design for enhanced reinforcement and protection
- Optimised Retreading because of the robust casing

Size	TRA Code	Ply Rating	Service Index	Standard Rim	Tread Depth (mm)	Tread Depth (32nd)	TT/TL
15.5R25	L-3	★	169A2	12.00/1.3	26.0	33	TL
20.5R25	E-3/L-3	★★	177B 193A2	17.00/2.0	33.0	42	TL
23.5R25	E-3/L-3	★★	185B 201A2	19.50/2.5	36.0	45	TL
26.5R25	E-3/L-3	★★	193B 209A2	22.00/3.0	37.0	47	TL
29.5R25	E-3/L-3	★★	200B 216A2	25.00/3.5	43.0	54	TL

\* Multiple Star Rating



# Tyre Solution.

## CB386

Loader / Grader

- Light duty classical lug E3/L3 designed for multi application
- Strong sidewall are shaped to minimize the damage from cutting
- Special cut and chip resistance compound



Size	TRA Code	Ply Rating	Service Index	Standard Rim	Tread Depth (mm)	Tread Depth (32nd)	TT/TL
17.5R25	E-3/L-3	★★	167B 182A2	14.00/1.5	27.0	34	TL
20.5R25	E-3/L-3	★★	177B 193A2	17.00/2.0	31.0	39	TL
23.5R25	E-3/L-3	★★	185B 201A2	19.50/2.5	34.0	43	TL
26.5R25	E-3/L-3	★★	193B 219A2	22.00/3.0	37.0	47	TL

\* Multiple Star Rating





## CB771

### Rigid Dump Truck

- Aggressive lug design with large blocks at tread centre provides excellent traction and braking on rough road
- Different compounds to optimize performance in all applications
- Additional protective sidewalls are shaped to minimize damage from cutting
- Optimised Retreading Ability because of the robust casing

Size	TRA Code	Ply Rating	Service Index	Standard Rim	Tread Depth (mm)	Tread Depth (32nd)	TT/TL
14.00R25	E-4	★★★	169B	10.00	38.0	48	TT/TL
16.00R25	E-4	★★	177B	11.25/2.0	44.0	55	TT/TL
18.00R25	E-4	★★★	189B	13.00/2.5	51.0	64	TL
18.00R33	E-4	★★★	211B	13.00/2.5	54.0	68	TL
21.00R33	E-4	★★★	203B	15.00/3.0	54.0	68	TL
21.00R35	E-4	★★★	204B	15.00/3.0	61.0	77	TL
24.00R35	E-4	★★★	212B	17.00/3.5	65.0	82	TL

## CB771A

Size	TRA Code	Ply Rating	Service Index	Standard Rim	Tread Depth (mm)	Tread Depth (32nd)	TT/TL
14.00R25	E-4	★★★	169B	10.00/1.5	38.0	48	TT

Note: Please consult your sales representative for CB771A



# Tyre Solution.

## CB791

### Rigid Dump Truck

- Aggressive lug design with extra deep grooves offer strong traction for dump trucks requiring power traction to travel over soft and muddy terrain
- Different compounds to optimize performance in all applications
- Additional protective sidewalls are shaped to minimize damage from cutting
- Optimised Retreading Ability because of the robust casing

Size	TRA Code	Ply Rating	Service Index	Standard Rim	Tread Depth (mm)	Tread Depth (32nd)	TT/TL
27.00R49	E-4	★★	223B	19.50/4.0	72.0	91	TL



# Tyre Solution.



E-4

## TUE401 II



- Unique tread pattern design equips tire with excellent traction.
- Special curing procedures generates a reliable final product.
- High-tensile specialized wire.
- Better ground impression, optimum ground pressure distribution and low ground compaction to provide longer service time.
- Steel belt construction provide 15% more load capacity compared to last generation.
- Unique design minimizes temperature build-up and reduce deformation.
- Ultra-deep block pattern provides puncture resistance and excellent traction performance. Self clean pattern to avoid damage by rock. Enhanced shoulder design for better anti-puncture performance.
- Reinforced sidewall design increase the protection and anti-puncture capability.
- Compatible with normal or heat resistance compound.




Size	TT/TL	Rim	TRA Code	Load Speed Index	Star Rating	Tread Depth (mm/32ND)	Overall Diameter (mm/inch)	Section Width (mm/inch)	Inflation Pressure (KPA/PSI)	Loading Capacity (Kg/Lbs)	Speed (Km/mph)
12.00R20	TT	8.5	E-4	156/153B	★★★	33	1122	313	900	4000/3650	50
				42	44.2	12.3	131	8820/8050	30		
				162/158B	★★★	33	1122	313	930	4750/4250	50
12.00R24	TT/TL	8.5	E-4	160/156F	★★★	42	44.2	12.3	135	10500/9370	30
				33	1226	313	850	4500/4000	80		
				42	48.3	12.3	123	9920/8820	50		
14.00R25	TT/TL	10.00/2.0	E-4	164/161B	★★★	33	1226	313	970	5000/4625	50
				42	48.3	12.3	141	11000/10200	30		
				38	1400	375	700	5800	50/10		
16.00R25	TT/TL	11.25/2.0	E-4	169B/188A2	★★★	48	55.1	14.8	102	12800	30/6
				44	1495	430	800	8000	50		
				55	58.9	16.9	116	17600	30		

# Tyre Solution.



**O'Green Tyres**  
**7.50R16 AG168**  
**14PR**



**O'Green Tyres**  
**10.00R20 HL718**  
**18PR**




**O'Green Tyres**  
**10.00R20 HL878**  
**18PR**



**O'Green Tyres**  
**11.00R20 HL718**  
**16PR**



**O'Green Tyres**  
**11.00R20 HL932**  
**16PR**




**O'Green Tyres**  
**14.00-24 E3/L3**  
**20PR**



**O'Green Tyres**  
**17.5-25 E3/L3**  
**20PR**



**O'Green Tyres**  
**12.00R20 HL932**  
**18PR**



**O'Green Tyres**  
**12.00R20 HL903**  
**18PR**



**O'Green Tyres**  
**23.5-25 E3/L3**  
**24PR**



# Tyre Solution.

Selain tyre baru kami juga menyediakan jasa repair tyre dan tyre second dengan kondisi yang bagus dan bergaransi.



# Undercarriage Solution.

Produk undercarriage brand new & undercarriage rebuild harga terjangkau.





## Background.

Kondisi market batubara yg akhir-akhir ini cenderung tidak stabil membuat kontraktor harus mencari alternatif parts yang bisa mendukung 2 kondisi tersebut yang pasti akan terjadi.



Jika batubara **naik** maka akan terjadi **kelangkaan parts** dikarenakan banyak permintaan.

Jika kondisi batubara **turun** maka membutuhkan **parts** dengan **harga yang terjangkau** untuk mensupport produksi.

Atas kondisi inilah kami hadir memberikan solusinya khususnya dalam mensupport parts undercarriage anda yaitu dengan menggunakan undercarriage rebuild yang dapat mengatasi kondisi market batubara yang tidak stabil. Dengan cara me-rebuild komponen undercarriage anda yang sudah aus menjadi komponen siap pakai dengan harga yang terjangkau dan bergaransi.

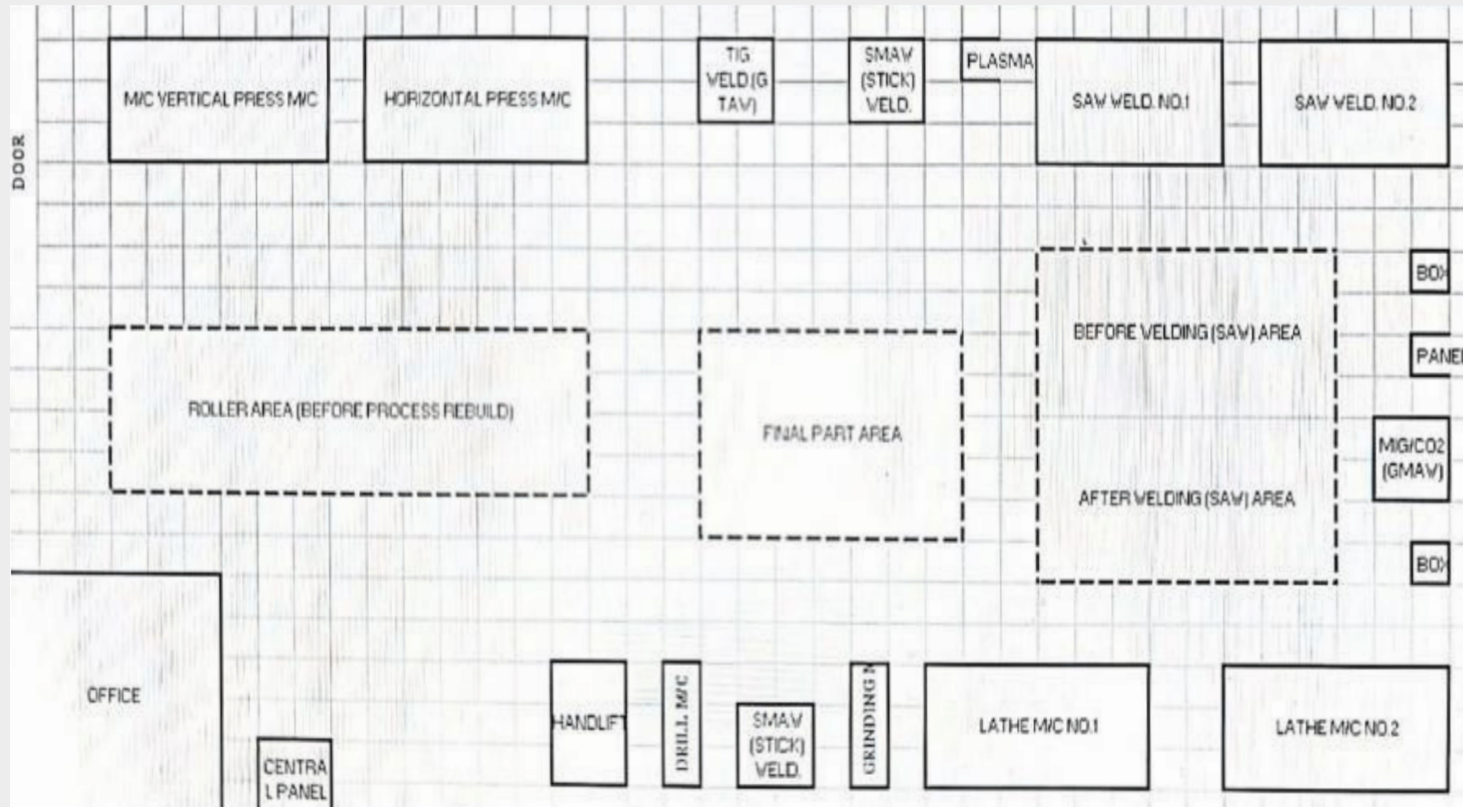
# Undercarriage Solution.



# 01. Our Workshop.

# Undercarriage Solution.

Denah Workshop



## 02. Our Equipment.

# Undercarriage Solution.

### Hydraulics Machines



Vertical Press M/C

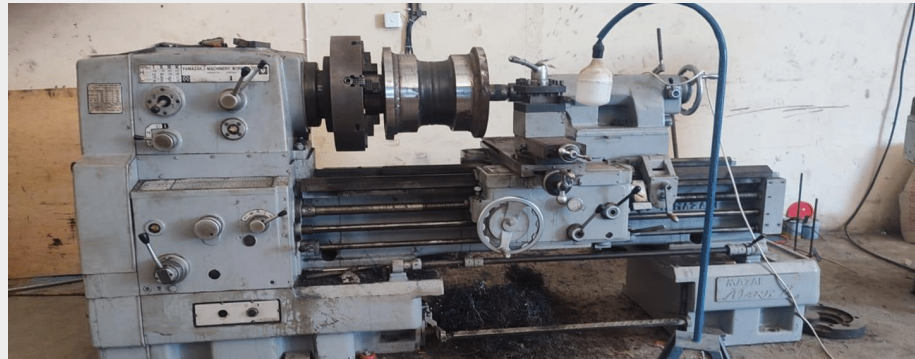


Horizontal Press M/C

## 02. Our Equipment.

# Undercarriage Solution.

Lathe M/C No 1



Lathe M/C No 2



## 02. Our Equipment.

# Undercarriage Solution.

Grinding M/C



SAW/Weld No 1



SAW/Weld No 2



Drill M/C



## 02. Our Equipment.

# Undercarriage Solution.

**MG/CO<sub>2</sub>GMAW**



**SMAW (stick) Weld**



**Compressor**



**Plasma M/C**



**Tig Weld (GTAV)**



### 03. Process

# Undercarriage Solution.

Pre Heating Process



### 03. Process

# Undercarriage Solution.

Assembling and Disassembling Process





### 03. Process

# Undercarriage Solution.

Lathe Process



### 03. Process

# Undercarriage Solution.

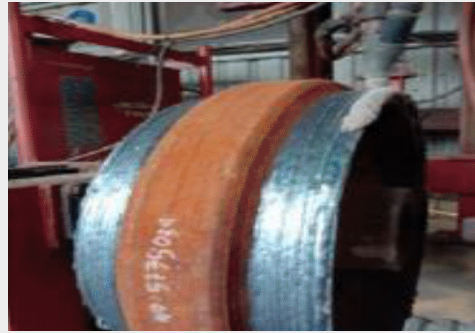
Other Welding Process



## 04. Activity

# Undercarriage Solution.

### Proses Pengelasan Idler D375



01. Preheat hingga 200°C selama 5 menit.
02. Metode pengelasan yang digunakan itu **Submerged Arc Welding** atau **SAW** (*welding* harus dilakukan secara simultan dan seimbang antara *base contact left* dan *right*, hal ini untuk mencegah penumpukan panas berlebih pada 1 titik).

### Proses Machining (Bubut) Idler D375



## 04. Activity



**Cek Hardness (50-55 hrc)**



**Proses Torque Idler**



**Cek Kevacuman selama 5 Menit**



**Pengisian Oil with SAE**



**Packing**



**Inner Part (Floating Seal, Bearing) use Local Made**



**Proses Rebuilt Track Roller PC2000**



**Proses Machining (Bubut) Track Roller PC2000**



## 04. Activity

# Undercarriage Solution.

Technical Wearrate Track Roller and Idler Rebuilt PC2000.



Perbandingan dengan hardness product PTS FAB (Carrier Roller Dozer)



**Note :**

- 01.** Secara kekerasan roller dan idler produk pama sudah sesuai dengan kekerasan rebuilt roller product pama bpob yang secara hasil telah mencapai ekspektasi lifetie (3000 jam) dengan tingkat travel lebih dominan karena terpasang di Dozer (D155 & D375).
- 02.** Kondisi roller & idler rebuilt Pc2000 akan lebih awet karena tingkat travel yang tidak dominan di setiap site.

# Undercarriage Solution.

## Product Result Rebuild Undercarriage



# Undercarriage Solution.

Selain Rebuild Undercarriage kami juga menyediakan product undercarriage brand new dengan harga yang kompetitif, berikut product yang kami sediakan untuk mensupport produksi anda.



# Consumable Solution.

Perlengkapan pendukung untuk kegiatan operation & maintenance.





## 01. Cyanoacrylate.

Product selection.

# LOCTITE



## Consumable Solution.

- One component adhesive cure at room temperature.
- Cure by Moisture mechanism.
- Very fast curing speed ( in seconds).
- Bonds to various materials (metal, plastics, rubber).

# 01. Cyanoacrylate.

Product selection.



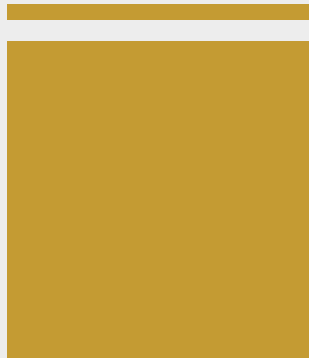
**General Purpose.**



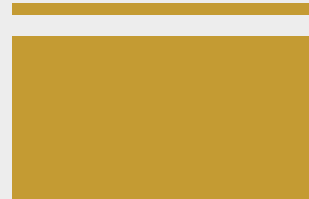
**Rubber Material.**



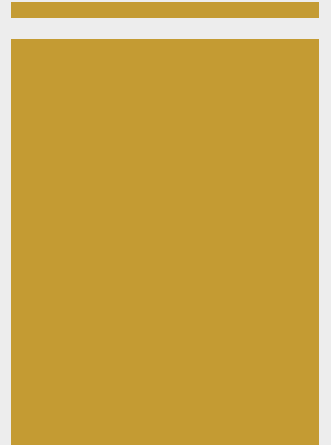
**Low Odor /  
Low Bloom.**



**High Impact.**



**High Viscous.**



# Consumable Solution.

## 02.

### Anaerobic Adhesive.

Product selection.



**Threadlocker**



**Threadsealant**



**Retaining Compound**



**Gasketing**

# Consumable Solution.

### 03. Threadlocker.

Type of threadlocker.



## Consumable Solution.

### Low Strength.

Purple color.

Removable, good for adjustment screws, fasteners up to M6.

### Medium Strength.

Blue color.

Removable with hand tools, fasteners up to M25.

### High Strength.

Red color.

Removable with higher strength.

### Wicking.

Green color.

Removable with hand tools for pre-assembled fasteners.

## 03.

**Threadlocker.**

Type of threadlocker.

**LOCTITE****Consumable Solution.**

	Criteria	Product	Colour	Fluorescence	Thread size up to	Operating temperature
<b>General purpose:</b>	Low strength	Loctite® 222		YES	M6	-55C to +150C
	Medium strength	Loctite® 243		YES	M20	-55C to +180C
	High strength	Loctite® 263		YES	M27	-55C to +180C
	High strength	Loctite® 271		YES	M27	-55C to +180C
<b>Special Purpose</b>	Wicking	Loctite® 290		YES	M12	-55C to +150C
	High temperature	Loctite® 272		NO	M36	-55C to +230C
	Big Size	Loctite® 277		NO	Big	-55C to +180C

## 04. Threadsealant.

Fundamental.



# Consumable Solution.

## How to Stop/Prevent Leaks?

- System Design.
- Welded or Brazed Connections.
- Thread Design.
- Sealants.
  - Mechanical.
  - Chemical.

## 04. Threadsealant.

Conventional Threadsealing.



### PTFE Tape



- Instant seal.
- Lubricity.
- Solvent resistance.
- Can be pre-applied.
- Shelf life.
- Cheap.

- Require extensive manual wrapping.
- Consistent coating is very difficult.
- Internal contamination when tighten threads due to shredding.
- Adjustment not possible (if back off, lose seal)
- Appearance looks awful after painting.
- Stainless steel not applicable.
- Lubrication can result in over tightening.
- Add stress or causing breakage.
- Low heat resistance.

# Consumable Solution.

## 04. Threadsealant.

Loctite Solution.

# LOCTITE

- Sealant to prevent leakage of gases and liquids from pipes and fittings by filling the space between interfacing threads,
- Loctite thread sealants sure to insoluble tough plastics thread fillers which prevent leakages regardless of the torque applied.



# Consumable Solution.



**04.****Threadsealant.**

Loctite Solution - Product Line up.

**LOCTITE****Consumable Solution.**

	Criteria	Product	Pressure Resistance (psi)	Viscosity (cP)	Operating temperature
<b>General purpose</b>	Controlled strength	Loctite® 565	10,000	300,000	-54C to +150C
	Medium strength	Loctite® 567	10,000	80,000	-54C to +204C
	Medium strength	Loctite® 577	10,000	80,000	-54C to 180C
<b>Special purpose</b>	Hydarulic/pneumatic	Loctite® 545	10,000	14,000	-54C to 150C
	Fine Thread	Loctite® 542	10,000	Thixotropic	-54C to 150C
<b>Cord</b>	Coated thread	Loctite® 55	10,000	Solid	-54C to 150C

## 05. Retaining Compound.

Fundamental.



# Consumable Solution.

### Function.

- Sealing engine core plugs.
- Mounting bearing in housing or no shaft.
- Fixing rotors, gears, sprockets, and pulley.
- Retaining cylinder linings.
- Eliminating keys and set screws.

### Requirement.

- Transfer of required torque.
- No slip during rotation torque.
- No corrosion on the joint area.
- No backlash.
- No fretting corrosion.
- To provide sealing.

## 05. Retaining Compound.

Loctite Retaining Compound.

**LOCTITE**



- Good adhesion and sealability to metal surfaces. Empty spaces 100% filled leak free.
- Micro "Keys & Keyways" create high shear strength and full transmission of torque.
- No fretting corrosion.
- Even stress distribution.
- Compensate for dissimilar material.
- Low machining cost, wider manufacturing tolerances.



- No suitable for oxygen service and strong oxidizing agents.

# Consumable Solution.

## 05. Retaining Compound.

Loctite Retaining Compound.



Criteria	Product	Viscosity	Max. Gap Fill (Diameter/mm)	Shear Strength (psi)	Operating temperature
Oil tolerant	Loctite® 603	125	0.005/0.1	3,770	-54C to +150C
General purpose	Loctite® 609	125	0.005/0.1	2,300	-54C to +150C
High Temp	Loctite® 620	8500	0.015/0.038	3,800	-54C to +232C
Maximum strength	Loctite® 638	2500	0.015/0.038	4,500	-54C to +180C
Maximum strength	Loctite® 640	600	0.007/0.018	3,200	-54C to +204C
High strength	Loctite® 648	500	0.006/0.0152	3,900	-54C to +180C
Press fit repair	Loctite® 660	Thixotropic	0.020/0.051	3335	-54C to +150C

# Consumable Solution.

## 06.

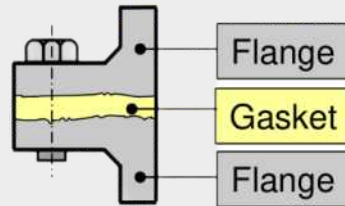
### Gasketing.

Loctite Solution.

# LOCTITE

- Use to prevent fluid or gas leaks from flanges assembly.

- Solid gasket dressing.
- Anaerobic flange sealants.
- RTV silicone flange sealants.



#### Loctite Gasketing Technologies:

##### Anaerobic.

- Small gap application (0.025-0.13 mm).
- Rigid metal-to-metal assemblies, example: gear box housing.

##### Silicone.

- High gap application (0.32-0.5 mm).
- High adhesion, high temperature application (up to 320°C).

## Consumable Solution.



## 06.

### Gasketing.

Loctite Solution - Application samples.

# LOCTITE



- Easy dispensing.
- Cost saving (reduce inventory, automated dispensing - reduce labor cost).
- High sealability.
- Reliability.
- Workability (manual or automated dispensing).



- Not suitable for oxygen service and strong oxidizing agents.

## Consumable Solution.



## 06.

### Gasketing.

Loctite Solution - Benefits.

# LOCTITE

- High tightening torque not required due to “no shrinkage”.
- Bolt tension stable due to the “no third material”.
- No creep by thermal expansion and shrinkage.
- No compression set over a period of time by tension.
- No reduction of flange compression.
- No sliding movement of flange and gasket reduces bolt loosening.
- No extrusion by a combination of compression and internal pressure.

## Consumable Solution.








## 06.

**Gasketing.**

Loctite Solution - Products Line up.

**LOCTITE****Loctite Anaerobic Flange Sealants**

Product	Colour	Fluorescence	Cure Speed	Maximum temperature	Tolerates micromovements	Supports flange stiffness	Specialities
510		No	Slow	200° C	Low	High	High temperature resistance
518		Yes	Fast	150° C	High	Medium	Aluminium flanges
573		Yes	Very slow	150° C	Low	Medium	Slow cure, low strength
574		Yes	Fast	150° C	Medium	Medium	General purpose
515		Yes	Fast	150° C	Medium	Medium	General purpose

**Consumable Solution.**



# 01. Industrial Wipes.



LAP INDUSTRI MODERN & ABSORBEN PENYERAP TUMPAHAN



**BERSIH - KERING - EKONOMIS**

01. Kuat dalam kondisi basah atau kering, dapat dibilas & digunakan berulang kali.
02. Efisien untuk membersihkan semua jenis kotoran, oli, gemuk & tumpukan cairan.
03. Kualitas & ukuran yang konsisten sehingga meningkatkan produktifitas kerja.
04. Hemat tempat penyimpanan & rendah biaya pembuangan limbahnya.
05. Bebas dari mikro organisme sehingga aman digunakan pada industri makanan.
06. Produk terbaik untuk menggantikan kain majun & lebih ekonomis.

# Consumable Solution.

SPESIFIKASI PRODUK				
	SWIPE-ALL S70 JUMBO ROLL	SWIPE-ALL S70 CENTER PULL	SWIPE-ALL S70 QUARTER FOLD	SWIPE-ALL S50 ROLL
Kode Produk	79970	79910	79960	79950
Material	Pulp 70% & PP 30% 70 Gram	Pulp 70% & PP 30% 70 Gram	Pulp 70% & PP 30% 70 Gram	Pulp 70% & PP 30% 50 Gram
Daya serap	Sangat tinggi	Sangat Tinggi	Sangat tinggi	Tinggi
Ukuran Lembar	30 x 35 cm	30 x 30 cm	28 x 34 cm	25 x 25 cm
Jumlah Lembar	900 Lembar/roll (Setara 180kg Majun)	900 Lembar(10x@90) (Setara 180kg Majun)	720 Lembar (8x@90) (Setara 144kg Majun)	800 Lembar/roll (Setara 80kg Majun)
Hygienitas Kemasan	Plastic Wrap + Box	Plastic Pack + Box	Plastic Pack + Box	Plastic Wrap + Box
Safety	<ul style="list-style-type: none"> <li>• Bebas Micro-Organisme (Sertifikat Hasil Uji dari IPB)</li> <li>• MSDS, TDS, COA.</li> </ul>			
Ramah Lingkungan	<ul style="list-style-type: none"> <li>• Mudah Di Daur Ulang &amp; Biaya Buang Limbah Lebih Murah vs Majun</li> <li>• Hemat Tempat Penyimpanan &amp; Lebih Ekonomis vs Majun.</li> </ul>			
Aplikasi	<ul style="list-style-type: none"> <li>• Automotive, Metal &amp; General Manufacturing, Mining, Oil &amp; Gas</li> <li>• Food, Beverage &amp; Dairy Manufacturing, Pharmaceutical &amp; Aviation.</li> </ul>			

## 02. Absorbent & Spill Kit.

**SWIPE-ALL®**



01. Menyerap dengan cepat & berdaya serap tinggi.
02. Dapat menyerap minyak yang ada di atas permukaan air.
03. Mudah dalam penyimpanan & pembuangan.
04. Berstandar internasional dilengkapi dengan MSDS & TDS.
05. Ramah lingkungan, setelah dipakai dapat dibakar dengan menyisakan abu kurang dari 0.02%.

# Consumable Solution.

	SWIPE-ALL OIL ABSORBENT	SWIPE-ALL CHEMICAL ABSORBENT	SWIPE-ALL UNIVERSAL ABSORBENT
Bentuk : Pad Ukuran : 40 x 50 cm Isi : 100 Pad/Box Daya Serap/Box: 100L (C80/U80) & 120 L (P80/P81)	P80 & P81 	C80 	U80 
Bentuk : Pillow Ukuran : 20 x 50 cm / 40 x 40 cm Isi : 16 Pillow/Box / 8 Pillow/Box Daya Serap/Box: 36L (C82/U82) & 43 L (P82) 72L (C84/U84) & 60 L (P84)	P82 & P84 	C82 & C84 	U82 & U84 
Bentuk : Roll Ukuran : 80 x 50 m (Perforasi@80 cm x 50 cm) Isi : 1 Roll/Bag Daya Serap/Box: 120L (C83/U83) & 140L (P83)	P83 	C83 	U83 
Bentuk : Boom XL Ukuran : 20 x 300 cm Isi : 4 Boom/Bag Daya Serap/Box: 240L (C85/U85) & 280L (P85)	P85 	C85 	U85 
Bentuk : Sock Ukuran : 7,6 x 120 cm Isi : 12 Boom/Box Daya Serap/Box: 63L (C86/U86) & 76L (P86)	P86 	C86 	U86 
Bentuk : Boom L Ukuran : 12,6 x 300 cm Isi : 4 Boom/Box Daya Serap/Box: 110L (C87/U87) & 130L (P87)	P87 	C87 	U87 
Bentuk : Spill Kit 20 L (5 Gallon) Spill Kit 45 L (12 Galon) Spill Kit 75 L (20 Gallon)	P20, P88, P75 	C20, C88, C75 	U20, U88, U75 
Bentuk : Spill Kit 120 L (32 Gallon) Spill Kit 240 L (63 Gallon) Spill Kit Customize Capacity	P89 & P90 	C89 & C90 	U89 & U90 
Bentuk : Spill Kit 660 L (174 Gallon) Spill Kit 1100 L ( 290 Gallon) Spill Kit Customize Capacity	P93 & P95 	C93 & C95 	U93 & U95 

## 02. Absorbent & Spill Kit.

**SWIPE-ALL®**

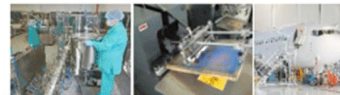


# Consumable Solution.

### SWIPE-ALL W90 LAP PEMBERSIH BEBAS DEBU

- Untuk membersihkan permukaan yang tidak boleh meninggalkan debu, seperti screen printing, mixer pengolahan makanan & obat dan proses sebelum pengecatan pada industri otomotif.
- Efektif mengangkat tinta pada pekerjaan printing & industri percetakan.
- Tidak abrasif sehingga aman untuk membersihkan semua permukaan.
- Dapat digunakan bersamaan cairan pelarut.
- Dapat dibilas dengan air atau cairan lain & bisa dipakai ulang.

Kode Produk : 79990  
 Ukuran Pad : 30 x 36 cm  
 Warna : Biru  
 Material : 100% Polypropelene  
 Kemasan : 528 Lembar Per Box  
 (8 Pack.@66 Lembar)



### SWIPE-ALL WD 50PP & WD 70 LAP UNTUK PENGELAPAN BASAH

- Lap pembersih yang digunakan dengan alkohol atau cairan lain sesuai keperluan.
- Dipakai diarea produksi pengolahan makanan & area lain yang memerlukan pengelapan basah.
- Dapat digunakan untuk pengelapan disinfektan.
- Kuat & efektif mengangkat kotoran pada berbagai permukaan.
- Praktis & mudah dibawa dalam kemasan bak plastik.

Kode Produk : 55550 & 55570  
 Ukuran Pad : 30 x 30 cm  
 Warna : Putih  
 Material : 100% PP (WD 50PP)  
 70% Pulp & 30% PP(WD 70)  
 Kemasan : 540 Lembar (6 Roll, @90 Lembar) + 1 Bucket



## 02.

### Absorbent & Spill Kit.

# SWIPE-ALL®



# Consumable Solution.

#### SWIPE-GO MICROFIBER LAP MICROFIBER HALUS

- Lap lembut & halus untuk berbagai permukaan.
- Berdaya serap sangat tinggi hingga 7x dari berat jenis kainnya.
- Cocok untuk pengelapan otomotif, peralatan elektronik dan pengelapan halus lainnya.
- Mudah dicuci bersih & tidak berbau.
- Kering 3x lebih cepat dibanding kain lap biasa.
- Harga promo selama persediaan masih ada.

Kode Produk : 87730  
Ukuran Pad : 35 x 35 cm  
Warna : Biru & Hijau  
Material : Polyester 80% & Polyamide 20%  
Kemasan : 20 Lembar Per Pack



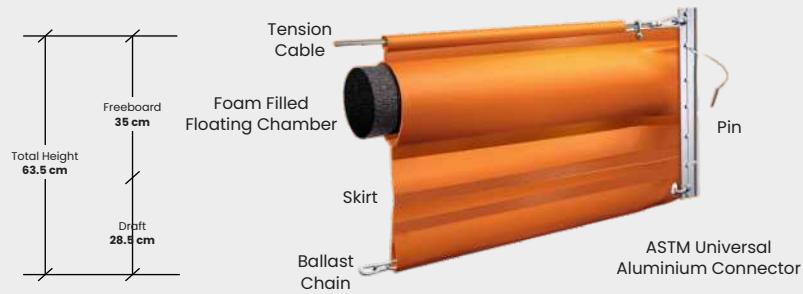
#### SWIPE-ALL SURFACE DISINFECTANT WIPES

- Mengandung :
  - Benzakonium Chloride 2.58%
  - Sodium Lauryl Sulfate
  - 2-Bromo-2-Nitropropane-1,3-Diol
  - Aloe Barbadensis Leaf Extract
  - Glycerin & Vitamin E.
- Efektif membunuh kuman, virus & bakteri pada permukaan benda yang menjadi sumber penularan.
- Lembut untuk mengelap berbagai jenis benda ( meja, handle pintu, handphone, laptop, saklar, railing tangga, dan lain - lain).

Kode Produk : 555800(800 Lbr) & 555400(400 Lbr)  
Ukuran Pad : 14 x 20 cm  
Warna : Putih  
Material : Spunlace Non Woven Fabric  
Kemasan : Starter Pack Isi 1 Roll + Bucket  
Refill Pack Isi 1 Roll.



### 03. Oil PVC Boom.



# Consumable Solution.

**Characteristic:**

- 01. High frequency of welding technique, high tensile strength.
- 02. Two types connection: ASTM aluminous connection/belt & rope& shackle, easy to join and operate.
- 03. Good waverider, stable, and well containment.



CODE	P10	P14	
FREEBOARD(MM)	100	140	
DRAFT(MM)	150	380	
SECTION LENGTH(MM)	7.62		
WORKING CONDITION	WIND SPEED(M/S)	8	8
	FLOW RATE (KN)	1	1
SECTION WEIGHT(KG)	13	15	

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.

### 03. Oil PVC Boom.



# Consumable Solution.

**Characteristic:**

- 01. Fast deployment, easy to operate, good air impermeability.
- 02. ASTM aluminous connection.

CODE	P1	P2	P3	P4	P5	
TOTAL HEIGHT (MM)	600	900	1100	1500	2000	
FREEBOARD (MM)	130	320	360	500	600	
DRAFT (MM)	380	460	560	750	1100	
SECTION LENGTH (M)	200					
WORKING PRESSURE (PA)	3000 - 5000					
WORKING CONDITION	TENTION STRENGHT (KN)	20	50	80	120	150
	WAVE HEIGHT (M)	0.3	1	1.5	3	3
	WIND SPEED (M/S)	8	15	15	20	20
	FLOW RATE (KN)	1	2	3	3	3

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.

### 03. Oil PVC Boom.



# Consumable Solution.

**Characteristic:**

- 01. Durable and anti-aging, long service time.
- 02. ASTM aluminous connection.
- 03. With reflective stripe.

CODE	RF1	RF2	RF3	RF4	
FREEBOARD (MM)	130	289	310	500	
DRAFT (MM)	380	390	479	750	
SECTION LENGTH (M)	20				
WORKING CONDITION	TENTION STRENGHT (KN)	50	65	80	120
	WAVE HEIGHT (M)	0.3	0.75	1	2
	WIND SPEED (M/S)	8	10	15	20
	FLOW RATE (KN)	1.5	1.5	2	3

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.

### 03. Oil PVC Boom.



# Consumable Solution.

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WORKING CONDITION	TENTION STRENGHT (KN)	50	65	80	120
	WAVE HEIGHT (M)	0.3	0.75	1	2
	WIND SPEED (M/S)	8	10	15	20
	FLOW RATE (KN)	1.5	1.5	2	3

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.



### 03. Oil PVC Boom.



# Consumable Solution.

**Characteristic:**

- 01. Heat-resistant steel floater, the highest temperature can reach to 100°C.
- 02. With flexible metal part between steel floater.
- 03. He skirt under the water is made of high strength and flame retardant PVC.
- 04. Outfit specialized storage rack, easy to transport and store.

CODE	FREEBOARD (MM)	DRAFT (MM)	WORKING CONDITION			
			TENTION STRENGTH (KN)	WAVE HEIGHT (M)	WIND SPEED (M/S)	FLOW RATE (KN)
FR1	300	480	50	1	15	1.5

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.

### 03. Oil PVC Boom.

**SWIPE-ALL<sup>®</sup>**



# Consumable Solution.

**Characteristic:**

- 01. Small storage volume, winding to the capstan, convenient to use and transport.
- 02. Good vertical stability, long time to use.
- 03. ASTM aluminous connection.

CODE	F1
TOTAL HEIGHT (MM)	910
FREEBOARD (MM)	300
DRAFT (MM)	580
WEIGHT (KG/M)	4.5
TENTION STRENGTH (KN)	>165
DRAG SPEED (STRAIGHT )(KN)	10
DRAG SPEED (CURVILINIER)(KN)	1
SECTION LENGTH (M)	20

**Suitable Condition:** River, lake, ocean, or any possible spill water area.

**Key Features:**

- 01. Suitable for emergency & semi-permanent deployment to recover oil spillage.
- 02. Easy to clean.
- 03. The connector can be easily joined without tools.

# Consumable Solution.



## Daruma MCP 501 Micro Check Penetrant



- 01.** Merupakan Penetrant berwarna merah pada proses NDT yang digunakan untuk mendeteksi cacat permukaan terbuka/retakan.
- 02.** Dapat digunakan juga pada aplikasi uji kebocoran pengelasan dan pekerjaan logam umum lainnya.

### Sifat Cairan

Penampilan : Merah  
Titik nyala : > 93°C  
Massa jenis : 0,845 g/cm<sup>3</sup>  
Korosi : Memenuhi AMS 2644  
Viskositas : 3,4 mm<sup>2</sup>/s

## Daruma MCD 502 Micro Check Developer



- 01.** Merupakan cairan pelarut pada proses NDT yang digunakan untuk membantu mempercepat proses pemeriksaan dengan indikasi yang lebih kuat dan sensitivitas yang lebih jelas.
- 02.** Bersifat non-halogenasi, memberikan lapisan warna putih untuk pengujian penetrant dengan cepat.

### Sifat Cairan

Penampilan : Putih cerah  
Titik nyala : N/A  
Massa jenis : 7.5 lb/gal (870g/L)  
pH : Netral  
NPE-Free : Ya

## Daruma MCD 502 Micro Check Developer



- 01.** Merupakan cairan pelarut pada proses NDT yang digunakan untuk membantu mempercepat proses pemeriksaan dengan indikasi yang lebih kuat dan sensitivitas yang lebih jelas.
- 02.** Bersifat non-halogenasi, memberikan lapisan warna putih untuk pengujian penetrant dengan cepat.

### Sifat Cairan

Penampilan : Bening (tidak berwarna)  
Titik nyala : > 57°F / 14°C  
Massa jenis : 6,19 lb/gal/ 755 g/L  
Korosi : Memenuhi AMS 2644  
Nonvolatile residu: < 50 ppm



## Daruma C5A Copper Anti Seize

Spesial Lubricant/Grease dengan formula khusus berbahan dasar butiran Copper/Tembaga dan Oli khusus yang bisa bertahan dari temperatur 29°C sampai 982°C. Kelebihan lainnya:



- 01.** Panas extreme : 29°C sampai 982°C.
- 02.** High load/tekanan tinggi tapi putaran rendah.
- 03.** Anti seizing/Galling.
- 04.** Rust protection/melindungi dari karat.

### Aplikasi umum digunakan seperti:

- Baut yang terpapar lingkungan industri/corrosive.
- Part di area panas tinggi agar tidak seizing.
- Bushing/pin, dll.

## Daruma G307 Lithium Complex Grease

Grease dengan formula khusus. Lithium Complex yang tahan terhadap tekanan extreme dan anti wear. Kelebihan lainnya:



- 01.** Temperature/Dropping point : 260°C.
- 02.** Speed max : 2.000 RPM.
- 03.** Red color.
- 04.** NLGI 2.

### Aplikasi umum digunakan seperti:

- High speed sleeve bearing.
- Bushing/pin.
- Electric motor bearing, dll.

# Consumable Solution.

**DARUMA**  
Your Everyday Industrial Partner

## Daruma C063 Super Cleaner

Chemical Solvent Cleaner Non-CFC yang didesign untuk membersihkan permukaan mould atau metal dari pengotor, seperti :



- Grease/Oli.
- Baked-on grease or oil.
- Build up carbon deposit.
- Dust/debu.

Aplikasinya sangat mudah, disemprotkan ke permukaan yang akan dibersihkan, cairan akan cepat kering sehingga cairan tidak menyebar ke tempat area yang tidak dibutuhkan. Dapat diaplikasikan ke area vertikal.

## Daruma C791 Electrical Contact cleaner

Chemical Solvent Cleaner Non-CFC yang didesign untuk membersihkan peralatan elektronik dan listrik , seperti :



- Grease/Oli.
- Baked-on grease or oil.
- Build up carbon deposit.
- Dust/debu.

Aplikasinya Cleaner disemprotkan ke permukaan elektrik yang akan dibersihkan, cairan akan cepat kering dan dapat diaplikasikan ke area vertikal.

### Sifat Cairan

- Cleaner tidak meninggalkan residu (no oil).
- Aman terhadap bahan plastik.
- Flammable (dipakai saat off).



# Consumable Solution.

## Daruma P019 Mould Protector

Chemical Anti corrosion agent yang didesign untk memproteksi permukaan Mould atau metal dari lingkungan, seperti:



- Kelembaban udara.
- Lingkungan yang corrocive (area industri).
- Dust/debu.

Aplikasinya sangat mudah, disemprotkan ke permukaan yang akan di proteksi.lindungi dari lingkungan corrosive, dan lingkungan dianjurkan untuk dibersihkan dahulu dengan Daruma C063 Super Cleaner.

## Daruma R810 Mould Release

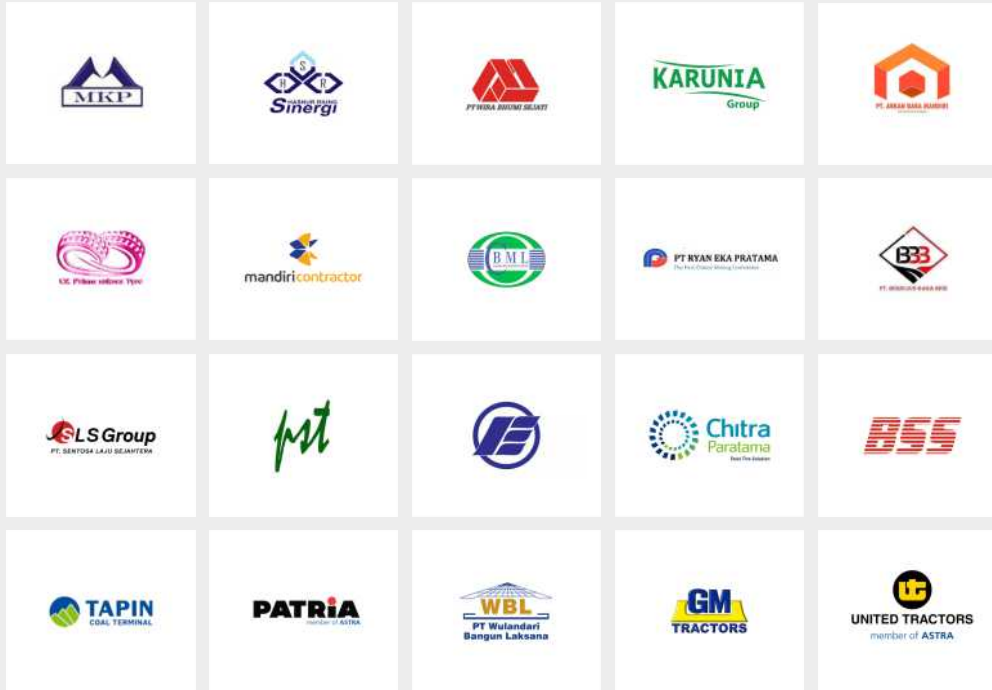
Chemical Release Agent Silicone Base yang didesign untuk me-release/melepaskan hasil cetakan dari permukaan Mould atau metal dari hasil cetakannya, seperti:



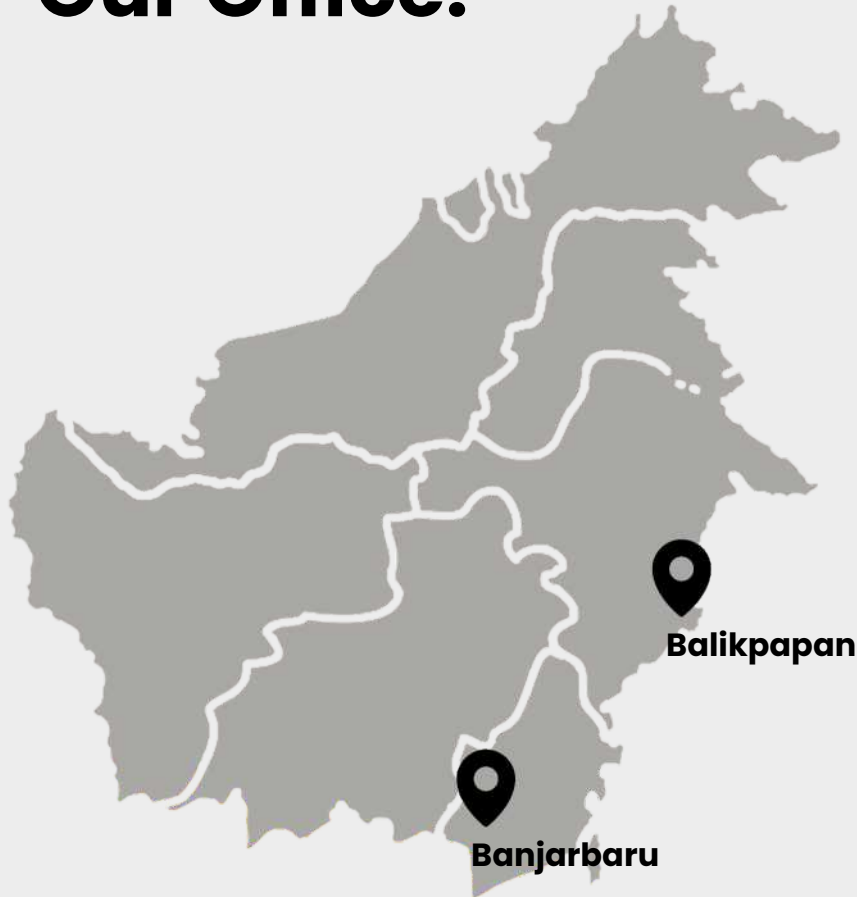
- Acrylic.
- Polyurethane, Polyester, Polystyrene.
- Rubber.
- Plastic.

Aplikasinya sangat mudah, disemprotkan ke permukaan mould sebelum dicetak. Hasil cetakan akan sulit untuk dicat karena release agent mengandung silicone.

# Our Customers.



# Our Office.



## Office Support KALTIM KALTARA :

📍 Pelangi Metro Residence Block N / 28  
Balikpapan Utara, Balikpapan.  
Kalimantan Timur.

☎ Arthur : 08119593757  
sales\_support@ana.co.id

## Workshop :

📍 Jl. Letjend S Parman No. 47  
Gunungsari Ulu 79122 Balikpapan.  
Kalimantan Timur.

## Office Support KALSEL KALTENG :

📍 Jl. Sukamaju, Komplek Sukses Mandiri NO. 72  
Landasan Ulin, Liangganggang, Banjarbaru.  
Kalimantan Selatan.

☎ Yayan : 081255465151  
yayan@ana.co.id



**Thank You.**